

GOVERNMENT OF INDIA

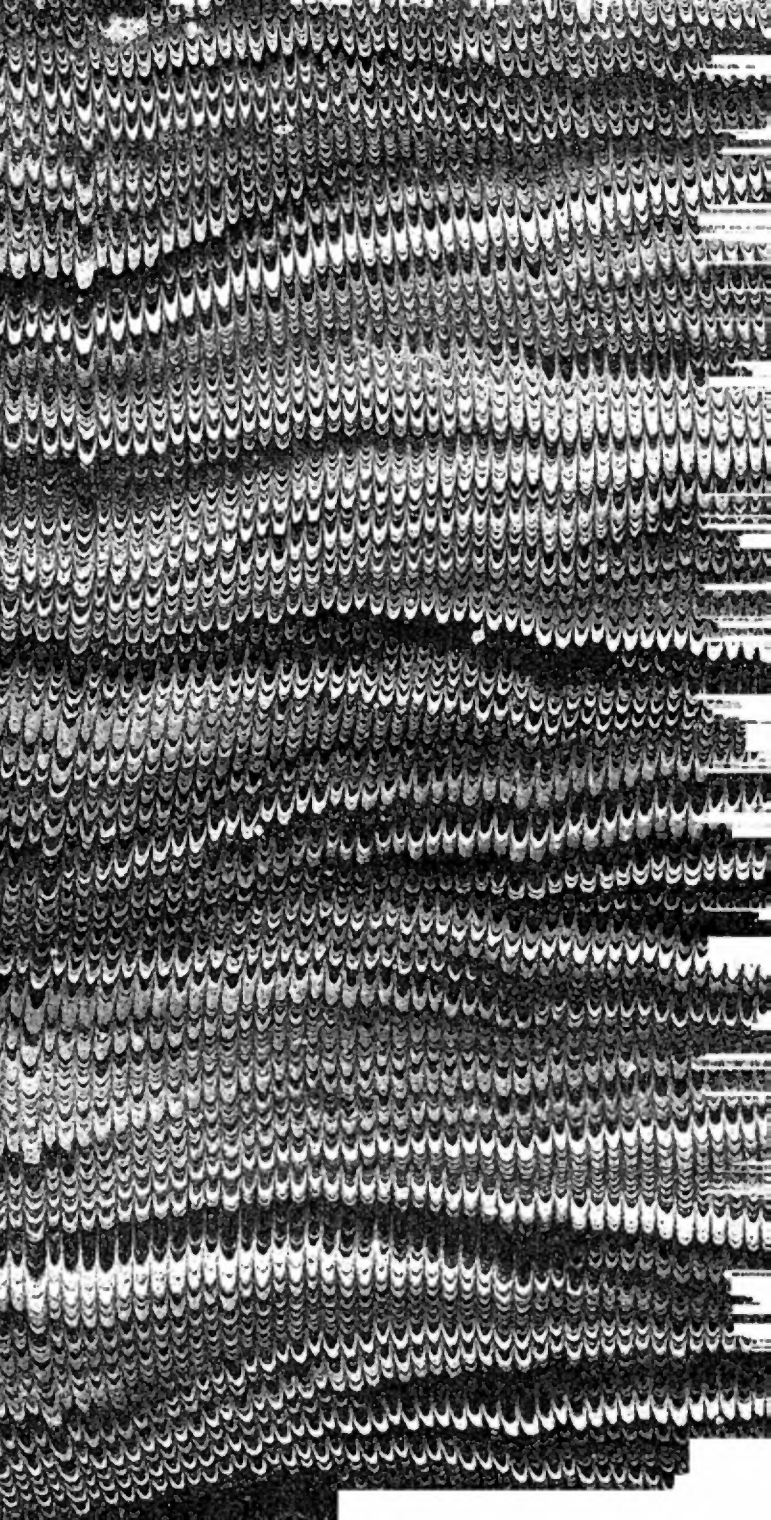
DEPARTMENT OF ARCHAEOLOGY

**CENTRAL ARCHAEOLOGICAL
LIBRARY**

25003

CALL No. 891.05/P.A.S.B

D.G A. 79.





PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.

EDITED BY
THE HONORARY SECRETARIES.



JANUARY TO DECEMBER,

1882.

25003

891.05
P.A.S.B.

A 3

CALCUTTA:

PRINTED BY J. W. THOMAS, BAPTIST MISSION PRESS,

AND PUBLISHED BY THE

ASIATIC SOCIETY, 57, PARK STREET.

1882.

CENTRAL ARCHAEOLOGICAL
LIBRARY, NEW DELHI.

Acc. No. 25003

Date..... 26. 12-56

Call No. 891-05/P.A.S.B.

CONTENTS.

| | <i>Page</i> |
|---|-------------|
| Proceedings for January, 1882 | 1-20 |
| Do. for February, including Annual Report | 21-54 |
| Do. for March, 1882 | 55-74 |
| Do. for April, „ | 75-88 |
| Do. for May, „ | 89-92 |
| Do. for June, „ | 93-102 |
| Do. for July, „ | 103-106 |
| Do. for August, „ | 107-136 |
| Do. for November, „ | 137-154 |
| Do. for December, „ | 155-168 |
| Index | 169-186 |
| List of Members of the Asiatic Society of Bengal on the 31st December, 1881, Appendix to February Proceedings i-xvi | |
| Abstract Statement of Receipts and Disbursements of the Asiatic Society of Bengal for the year 1881, Appendix to February Proceedings xvii-xxviii | |

LIST OF PLATES.

- I.—Map of the Singpho-Kampti country (p. 64).
- II.—Bank-note of the Ming Dynasty (p. 77).

[APPENDIX.]

LIST OF MEMBERS
OF THE
ASIATIC SOCIETY OF BENGAL.

ON THE 31ST DECEMBER, 1881.

LIST OF ORDINARY MEMBERS.

~~~~~

R. = Resident. N. R. = Non-Resident. N. S. = Non-Subscribing.  
L. M. = Life Members. F. M. = Foreign Members.

~~~~~

N. B.—Members who have changed their residence since this list was drawn up are requested to give intimation of such a change to the *Secretaries*, in order that the necessary alteration may be made in the subsequent edition. Errors or omissions in the following list should also be communicated to the *Secretaries*.

Members who are about to leave India and do not intend to return are particularly requested to notify to the *Secretaries* whether it is their desire to continue members of the Society; otherwise, in accordance with Rule 40 of the Bye-laws, their names will be removed from the list at the expiration of three years from the time of their leaving India.

| Date of Election. | | |
|-------------------|------|--|
| 1860 Dec. 5. | R. | Abdul-Latif, Khán Bahádúr, Nawab. <i>Calcutta.</i> |
| 1868 Sept. 2. | N.S. | Adam, R. M., Depy. Commissioner, Salt Revenue. <i>Europe.</i> |
| 1880 Dec. 1. | N.R. | Ahmad, Maulawi Dilawar Hasein. <i>Brahmanbariah.</i> |
| 1860 July 4. | N.R. | Ahmad Khán Bahádúr, Sayyid, c. s. i. <i>Aligarh.</i> |
| 1872 April 3. | N.R. | Absan-ullah, Nawáb. <i>Dacca.</i> |
| 1860 April 4. | N.S. | Aitchison, J. E. T., M. D., Surgeon-Major, 29th N. I. <i>Europe.</i> |
| 1871 June 7. | N.R. | Alexander, J. W., Principal, Residency College. <i>Indore.</i> |
| 1878 Mar. 6. | N.S. | Allen, G. W., c. i. e. <i>Europe.</i> |
| 1874 June 3. | R. | Amír Ali, Sayyid, Barrister at Law. <i>Calcutta.</i> |
| 1865 Jan. 11. | R. | Anderson, John, M. D., F. R. S., F. L. S., Superintendent, Indian Museum. <i>Calcutta.</i> |
| 1875 Feb. 3. | N.R. | Armstrong, J., Surgeon, Beng. Army. Marine Survey Department. |
| 1871 Sept. 6. | N.R. | Atkinson, Edwin Felix Thomas, B. A., c. s., Acct. General. <i>Bombay.</i> |
| 1869 Feb. 3. | N.R. | Attar Singh Bahádúr, Sirdár, c. i. e., M. U. F., Chief of Bhadour. <i>Ludiana.</i> |
| 1870 Feb. 2. | N.R. | Baden-Powell, Baden Henry, c. s., Conservator of Forests. <i>Lahore.</i> |
| 1873 Aug. 6. | N.R. | Badgley, Major William Francis, s. c., Offg. Deputy Superintendent of Surveys. <i>Shillong.</i> |
| 1862 Feb. 5. | N.R. | Baisák, Gaurdás, Depy. Magistrate. <i>Maldah.</i> |
| 1859 Aug. 3. | R. | Balaicband Siñha. <i>Calcutta.</i> |
| 1865 Nov. 7. | N.S. | Ball, Valentine, M. A., F. G. S., Trinity College. <i>Dublin.</i> |

| Date of Election. | | |
|-------------------|------|--|
| 1881 Sept. 22. | N.R. | Bandow, Chr. J. <i>Henzada.</i> |
| 1860 Nov. 1. | R. | Banerjea, Rev. Kristo Mohun, LL. D. <i>Calcutta.</i> |
| 1869 Dec. 1. | L.M. | Barker, R. A., M. D., Civil Surgeon. <i>Bogra.</i> |
| 1879 Aug. 28. | N.R. | Barkley, D. G., M. A., c. s., Offg. Commissioner. <i>Lahore.</i> |
| 1881 Aug. 3. | N.R. | Barstow, Henry Clements, c. s., Magistrate and Collector. <i>Cawnpore.</i> |
| 1860 July 4. | N.S. | Batten, George Henry Maxwell, c. s., Barrister at Law. <i>Europe.</i> |
| 1859 May 4. | L.M. | Bayley, The Hon. Sir Edward Clive, B. C. S., K. C. S. I., C. I. E. <i>Europe.</i> |
| 1878 June 5. | R. | Bayley, C. S., c. s., Offg. Under-Secretary to the Govt. of Bengal. <i>Calcutta.</i> |
| 1873 Feb. 5. | R. | Bayne, R. R., M. R. I. B. A., Draughtsman, Chief Engineer's Office, E. I. Railway. <i>Calcutta.</i> |
| 1864 Sept. 7. | N.R. | Beames, John, B. C. S., Offg. Commissioner, Burdwan Division. <i>Chinsurah.</i> |
| 1878 Sept. 25. | R. | Beighton, T. D., c. s., Offg. Judge. <i>Howrah.</i> |
| 1881 Mar. 2. | N.R. | Benett, W. C. <i>Cawnpore.</i> |
| 1862 Oct. 8. | N.R. | Bernard, Charles Edward, c. s., Offg. Chief Commissioner. <i>British Burmah.</i> |
| 1872 Aug. 7. | R. | Beverley, Henry, M. A., c. s., District and Sessions Judge, 24-Pergunnahs and Hugli. <i>Calcutta.</i> |
| 1876 Nov. 15. | N.R. | Beveridge, Henry, c. s., District and Sessions Judge. <i>Bankipur.</i> |
| 1878 Oct. 4. | R. | Bhakta, Krishna Gopal. <i>Calcutta.</i> |
| 1879 Mar. 5. | N.S. | Biddulph, Major J., B. S. C. <i>Europe.</i> |
| 1875 July 7. | N.R. | Black, F. C., Asst. Engineer. <i>Hamirpur, N. W. P.</i> |
| 1873 Dec. 3. | R. | Blackburn, J., M. I. C. E., Manager, Oriental Gas Company. <i>Calcutta.</i> |
| 1857 Mar. 4. | L.M. | Blanford, H. F., A. R. S. M., F. R. S., F. G. S., Meteorological Reporter, Govt. of India. <i>Calcutta.</i> |
| 1859 Aug. 3. | N.R. | Blanford, W. T., A. R. S. M., F. R. S., F. G. S., F. R. G. S., F. Z. S., Depy. Supdt., Geological Survey of India. |
| 1873 April 2. | N.R. | Blissett, T., Superintendent, Telegraph Stores. <i>Kur-rachee.</i> |
| 1879 Aug. 28. | R. | Blyth, W. D., B. A., c. s., Under-Secretary to the Govt. of Bengal. <i>Calcutta.</i> |
| 1881 Feb. 2. | R. | Bomford, Dr. G., Garrison Surgeon, Fort William. <i>Calcutta.</i> |
| 1880 Nov. 3. | N.R. | Bose, Pramatha Nath, B. sc., F. G. S., Geological Survey of India. |
| 1877 May 2. | R. | Bourdillon, James Austin, c. s., Inspector-General of Registration. <i>Calcutta.</i> |
| 1876 Nov. 15. | N.R. | Bowie, Major M. M., Depy. Commissioner. <i>Nagpur.</i> |
| 1868 Jan. 15. | N.S. | Boxwell, John, c. s., Offg. Deputy Commissioner. <i>Europe.</i> |

| Date of Election. | | |
|-------------------|------|---|
| 1876 May 4. | N.S. | Bradshaw, Surgeon-Major A. F., Surgeon to the Commander-in-Chief. <i>Europe.</i> |
| 1860 Mar. 7. | R. | Brandis, Dietrich, PH. D., F. L. S., F. R. S., Inspector-General of Forests. <i>Calcutta.</i> |
| 1879 Jan. 8. | N.S. | Browne, J. F., C. S., M. R. A. S., Offg. District and Sessions Judge, 24-Pergunnahs. <i>Europe.</i> |
| 1879 April 2. | R. | Calcutta, The Rt. Rev. the Lord Bishop of. <i>Calcutta.</i> |
| 1869 Jan. 20. | N.R. | Cadell, Alan, B. A., C. S., Magistrate. <i>Mirzapur.</i> |
| 1873 Mar. 5. | N.S. | Cappel, A. J. L., Offg. Director General of Telegraphs. <i>Europe.</i> |
| 1880 Mar. 3. | N.R. | Carlisle, A. C., Archæological Survey of India. <i>Mirzapur.</i> |
| 1881 Feb. 2. | N.R. | Carter, Philip John, Depy. Conservator of Forests. <i>Rangoon.</i> |
| 1876 Nov. 15. | R. | Cayley, Surgeon-Major H., Surgeon, Mayo Native Hospital. <i>Calcutta.</i> |
| 1875 April 4. | R. | Chambers, Dr. E. W. <i>Calcutta.</i> |
| 1881 Mar. 2. | N.R. | Channing, Francis Chorley, B. C. S. <i>Lahore.</i> |
| 1879 Nov. 5. | N.S. | Charles, T. E., M. D., F. R. C. P. <i>Europe.</i> |
| 1881 Mar. 2. | N.R. | Chatterji, Bhairab Chunder. <i>Jessore.</i> |
| 1880 May 5. | N.R. | Chatterji, Tara Prasada. <i>Satkhira.</i> |
| 1880 Jan. 7. | R. | Chaudhuri, Govinda Kumara. <i>Calcutta.</i> |
| 1861 Mar. 1. | N.R. | Chaudhuri, Harachandra, Zamindar. <i>Sherpur, Maimansingh.</i> |
| 1880 Nov. 3. | N.R. | Chaudhuri, Khirode Chandra Rôy, Head Master, Collegiate School. <i>Krishnagar.</i> |
| 1874 Aug. 5. | N.R. | Chennell, A. W., Asst. Surveyor, Survey Department. <i>Shillong.</i> |
| 1881 Mar. 2. | R. | Chunder, Sreenath. <i>Calcutta.</i> |
| 1877 Aug. 30. | N.S. | Clarke, Capt. Henry Wilberforce, R. E., Depy. Consulting Engr. for Guaranteed Railways, Govt. of India. <i>Europe.</i> |
| 1878 Feb. 6. | N.S. | Clarke, Colonel Sir A., R. E., K. C. M. G., C. B., C. I. E. <i>Europe.</i> |
| 1880 Aug. 26. | F.M. | Clerk, Lieut.-Colonel Malcolm G. <i>Europe.</i> |
| 1881 May 4. | R. | Cockburn, John, Indian Museum. <i>Calcutta.</i> |
| 1874 Nov. 4. | N.R. | Constable, Archibald, Resident Engineer and Personal Asst. to Chief Engineer, Oudh and Rohilkund Railway. <i>Lucknow.</i> |
| 1881 Mar. 2. | N.R. | Cook, Capt. L. A. C. <i>Jamrud.</i> |
| 1876 Mar. 1. | F.M. | Crawford, James, B. A., C. S., Barrister at Law, Registrar, High Court. <i>Europe.</i> |
| 1877 June 6. | R. | Croft, A. W., M. A., Director of Public Instruction. <i>Calcutta.</i> |
| 1874 Mar. 4. | N.R. | Crombie, Alexander, M. D., Civil Surgeon. <i>Simla.</i> |
| 1877 Feb. 7. | N.R. | Crooke, William, C. S. <i>Awagarh, N. W. P.</i> |
| 1873 Aug. 6. | R. | Cunningham, David Douglas, M. D., Professor, Medical College. <i>Calcutta.</i> |

| Date of Election. | | |
|-------------------|------|--|
| 1873 Dec. 3. | F.M. | Dames, Mansel Longworth, c. s., Asst. Commissioner. <i>Europe.</i> |
| 1877 June 6. | N.R. | Darbhanga, Mahārājā of. <i>Darbhanga.</i> |
| 1865 June 7. | N.R. | Dās, Rājā Jaykishan, Bahādur, c. s. i. <i>Bijnor.</i> |
| 1879 April 2. | N.R. | Dās, Rām Saran, M. A. <i>Rāmsarandāspūr</i> , near <i>Burra-gaon, Fyzabad, Oudh.</i> |
| 1869 April 7. | F.M. | Day, Dr. Francis, F. L. S., F. Z. S. <i>Europe.</i> |
| 1856 June 4. | R. | DeBourbel, Lieut.-Col. Raoul, R. E., Consulting Engineer to the Govt. of India for Guaranteed Railways. <i>Calcutta.</i> |
| 1859 Oct. 6. | N.R. | Delmerick, J. G., Extra Asst. Commissioner. <i>Am-bala City.</i> |
| 1862 May 7. | N.R. | Dhanapati Singh Dugbar, Rāi Bahādur. <i>Azamganj.</i> |
| 1877 July 4. | R. | Diler Jang, Nawāb Syad Asbgar Alī, Khan Bahādur, c. s. i. <i>Calcutta.</i> |
| 1875 Mar. 3. | N.R. | Dodgson, Walter. <i>Rangpur.</i> |
| 1878 May 2. | N.R. | Donaldson, P., Superintendent of the Jail. <i>Buzar.</i> |
| 1875 Mar. 3. | N.S. | Douglas, J., Supdt. of Telegraphs, Check Office. <i>Europe.</i> |
| 1879 Feb. 5. | N.R. | Duthie, J. F., Superintendent, Govt. Botanical Gardens. <i>Saharunpore.</i> |
| 1877 Aug. 30. | N.R. | Dutt, Kedarnath, Sub-divisional Officer. <i>Basirhat, 24-Pergunnahs.</i> |
| 1873 April 2. | R. | Dutt, Umesh Chunder. <i>Calcutta.</i> |
| 1881 Mar. 2. | R. | Eden, The Hon. Sir Ashley, K. C. S. I., C. I. E., Lieutenant-Governor of Bengal. <i>Calcutta.</i> |
| 1870 Mar. 8. | L.M. | Edinburgh, H. R. H. The Duke of. <i>Europe.</i> |
| 1863 May 6. | N.R. | Edgar, John Ware, c. s., c. s. i., Magistrate. <i>Ohamparan.</i> |
| 1879 Mar. 5. | R. | Eetvelde, E. van, Consul General for Belgium. <i>Calcutta.</i> |
| 1874 Dec. 2. | N.R. | Egerton, The Hon. Sir Robert Eyles, c. s., K. C. S. I., C. I. E., Lieut.-Governor of the Panjab. <i>Lahore.</i> |
| 1880 April 7. | N.R. | Elias, Ney, Joint Commissioner. <i>Ladakh.</i> |
| 1871 Dec. 2. | R. | Eliot, J., M. A., Meteorological Reporter to the Govt. of Bengal. <i>Calcutta.</i> |
| 1871 Oct. 4. | N.R. | Evezard, Major-General G. E. <i>Coonoor, Nilgiri Hills.</i> |
| 1859 Dec. 7. | R. | Fath Alī, Maulawī. <i>Calcutta.</i> |
| 1863 Jan. 15. | R. | Fedden, Francis, Asst., Geological Survey of India. <i>Calcutta.</i> |
| 1876 Jan. 5. | R. | Feistmantel, Ottokar, M. D., Palæontologist, Geological Survey of India. <i>Calcutta.</i> |
| 1880 April 7. | N.R. | Fiddian, W., M. A., c. s., Offg. Magistrate and Collector. <i>Midnapur.</i> |
| 1879 July 2. | N.R. | Finucane, M., c. s., Joint Magistrate. <i>Gaya.</i> |

| Date of Election. | | |
|-------------------|------|---|
| 1881 July 6. | R. | Firukh Shah, Prince Mahomed. <i>Calcutta.</i> |
| 1869 Sept. 1. | N.R. | Fisher, John Hadden, c. s., Offg. Collector. <i>Mirath.</i> |
| 1872 Dec. 4. | N.R. | Forbes, Lieut.-Col. John Greenlaw, R. E., <i>Allahabad.</i> |
| 1876 July 5. | N.R. | Foulkes, The Rev. Thos., F. L. S., M. R. A. S., F. R. G. S., Chaplain. <i>Bangalore.</i> |
| 1869 Sept. 1. | N.R. | Fryer, Lieut.-Col G. E., Deputy Commissioner. <i>Maulmain, B. Burmah.</i> |
| 1867 Sept. 4. | N.S. | Fyfe, The Rev. W. C., M. A., Principal, Free Church College. <i>Europe.</i> |
| 1880 April 7. | N.R. | Gajapati, Ananda Ram, Raja of Vizianagram. <i>Vizianagram.</i> |
| 1873 Dec. 3. | N.R. | Gamble, J. S., B. A., Asst. to Inspector General of Forests. <i>Darjiling.</i> |
| 1871 Aug. 2. | N.R. | Gangaprasad, Munshi, Depy. Collector. <i>Mathura.</i> |
| 1874 July 1. | N.S. | Gardner, David Mason, c. s., Offg. Magistrate and Collector. <i>Europe.</i> |
| 1879 Mar. 5. | R. | Garrett, A. W., M. A., Inspector of Schools, Presy. Circle. <i>Calcutta.</i> |
| 1859 Aug. 3. | L.M. | Gastrell, Major-General James Eardley (retired). <i>Europe.</i> |
| 1867 Dec. 4. | N.S. | Gay, E., M. A., c. s. <i>Europe.</i> |
| 1877 Aug. 30. | R. | Ghosha, Jnanendra Chandra. <i>Calcutta.</i> |
| 1871 May 3. | R. | Ghosha, Káliprasanna. <i>Calcutta.</i> |
| 1877 Dec. 5. | N.R. | Ghosha, Dr. Krishna Dhana. <i>Rangpur.</i> |
| 1869 Feb. 3. | R. | Ghosha, Pratápachandra, B. A. <i>Calcutta.</i> |
| 1870 May 4. | R. | Ghoshál, Rájá Satyánand. <i>Calcutta.</i> |
| 1880 Aug. 4. | R. | Gibbs, The Hon. James, C. S. I., C. I. E., F. R. G. S., M. R. A. S., Member of the Governor-General's Council. <i>Calcutta.</i> |
| 1875 July 7. | N.R. | Girdlestone, Charles Edward Ridgway, c. s., Resident. <i>Katmandu, Nepal.</i> |
| 1861 Feb. 5. | F.M. | Godwin-Austen, Lieut.-Colonel H. H., F. R. S., F. Z. S., F. R. G. S. <i>United Service Club, St. James', London.</i> |
| 1862 July 2. | N.R. | Gordon, Robert, c. E., Executive Engineer, P. W. D., <i>Henzada, B. Burmah.</i> |
| 1869 July 7. | N.R. | Gordon, James Davidson, c. s., c. s. I., Offg. Chief Commissioner. <i>Mysore.</i> |
| 1881 Mar. 2. | R. | Gosain, Hem Chunder. <i>Calcutta.</i> |
| 1863 Nov. 4. | F.M. | Gowan, Major-General J. Y. <i>Europe.</i> |
| 1879 Jan. 8. | F.M. | Gowan, Capt. W. E., 21st Nat. Infy. <i>Europe.</i> |
| 1877 Nov. 7. | L.M. | Grant, Alexander, M. I. C. E., Director of State Railways. <i>Europe.</i> |
| 1876 Nov. 15. | N.R. | Grierson, George Abraham, c. s., Offg. Joint Magistrate. <i>Bankipur.</i> |
| 1861 Sept. 4. | N.R. | Griffin, Sir Lepel Henry, c. s., K. C. S. I., Resident. <i>Indore.</i> |

| Date of Election. | | |
|-------------------|------|---|
| 1878 May 2. | N.R. | Griffith, R., M. A., Director of Public Instruction, N. W. P. and Oudh. <i>Allahabad.</i> |
| 1861 Feb. 6. | N.R. | Growse, Frederick Salmon, M. A., C. S., C. I. E., Magistrate and Collector. <i>Bulandshahr, N. W. P.</i> |
| 1880 Feb. 4. | R. | Gupta, Behárilál, C. S. <i>Calcutta.</i> |
| 1867 July 3. | R. | Hacket, Charles Augustus, Assistant, Geol. Survey of India. <i>Calcutta.</i> |
| 1879 Mar. 5. | R. | Harraden, S. <i>Calcutta.</i> |
| 1861 Feb. 2. | N.R. | Harrison, A. S., B. A., Principal, Muir Central College. <i>Allahabad.</i> |
| 1877 Sept. 27. | R. | Hart, J., Attorney at Law. <i>Calcutta.</i> |
| 1880 Aug. 26. | N.R. | Hassan, Khalif Syad Mahomed, Khan Bahádur, Prime Minister. <i>Puttiala.</i> |
| 1875 Mar. 3. | N.R. | Hendley, Dr. Thomas Holbein, Residency Surgeon, and Offg. Political Agent, Eastern Rajpootana States. <i>Jaipur, Rájputáná.</i> |
| 1879 Mar. 5. | N.S. | Herschel, Major J., R. E., F. R. S., Survey of India. <i>Europe.</i> |
| 1875 Aug. 4. | N.R. | Hewitt, James Francis Katherinus, C. S., Commissioner. <i>Chota Nagpur.</i> |
| 1872 Dec. 4. | R. | Hoernle, Rev. A. F. R., PH. D., Offg. Principal of the Madrasah. <i>Calcutta.</i> |
| 1878 Mar. 6. | F.M. | Hoey, W. <i>Europe.</i> |
| 1868 Nov. 4. | N.R. | Holroyd, Lieut.-Col. William Rice Morland, Director of Public Instruction. <i>Lahore, Punjab.</i> |
| 1873 Jan. 8. | L.M. | Houstoun, G. L., F. & S. <i>Europe.</i> |
| 1863 Jan. 15. | N.R. | Howell, Mortimer Sloper, C. S. <i>Shahjehanpur.</i> |
| 1878 Sept. 25. | N.S. | Hughes, G., C. S., Assistant Commissioner. <i>Europe.</i> |
| 1867 Aug. 7. | N.R. | Hughes, T. H., A. R. S. M., F. G. S., Geol. Survey of India. <i>Kutni.</i> |
| 1866 Jan. 17. | N.R. | Hughes, Major W. G., M. S. O. <i>Tavoy, B. Burmah.</i> |
| 1870 Jan. 5. | N.R. | Hume, Allan Octavian, C. B., C. S. <i>Allahabad.</i> |
| 1872 Dec. 4. | N.R. | Ibbetson, Denzil Charles Jelf, C. S., Deputy Commissioner of the Punjab Census. <i>Simla.</i> |
| 1866 Mar. 7. | N.R. | Irvine, William, C. S., Joint Magistrate. <i>Ghazipur.</i> |
| 1871 Mar. 8. | N.S. | Isaac, T. S., C. E. <i>Europe.</i> |
| 1853 Dec. 7. | N.R. | Isvari-prasad Singh, Raja. <i>Benares.</i> |
| 1874 Feb. 4. | R. | Jackson, Surgeon Major Charles Julian. <i>Calcutta.</i> |
| 1878 May 2. | N.S. | Jackson, Sir L. S. <i>Europe.</i> |
| 1880 Dec. 1. | N.R. | Jackson, William Grierson, B. C. S. <i>Mirzapur, N. W. P.</i> |
| 1876 July 5. | F.M. | Jarrad, Lieut. F. W., R. N., F. R. A. S., Marine Survey Dept. <i>Hydrographic Office, Admiralty, London.</i> |
| 1879 Mar. 5. | R. | Jarrett, Major H. S., B. S. C., Secy. to the Board of Examiners. <i>Calcutta.</i> |

| Date of Election. | | |
|-------------------|------|---|
| 1881 Feb. 2. | N.R. | Jenkins, Capt. Thomas Morris, M. S. C., Asst. Commissioner and J. P. for Burmah. <i>Rangoon.</i> |
| 1879 Aug. 6. | F.M. | Joest, Herr W. <i>Cologne.</i> |
| 1866 Feb. 7. | N.R. | Johnson, W. H., C. E. <i>Dera Ismail Khan.</i> |
| 1862 Mar. 5. | N.R. | Johnstone, Lieut.-Colonel James William Hope, Commissioner. <i>Jallandhar.</i> |
| 1867 Dec. 4. | N.R. | Johnstone, Lieut.-Col. James, Political Agent. <i>Manipur, via Cachar.</i> |
| 1878 Aug. 7. | N.R. | Johnstone, P. DeLacy, C. S. <i>Multan.</i> |
| 1873 Dec. 3. | N.R. | Johore, H. H., Maharájá of, K. C. S. I. <i>New Johore, Singapore.</i> |
| 1873 April 2. | N.S. | Jones, Frederick, C. S., Magistrate and Collector. <i>Europe.</i> |
| 1875 Nov. 3. | N.R. | Jones, Samuel Simpson, B. A., C. S., Asst. Commissioner, Deoghur Division. <i>Santhal Pergunnahs.</i> |
| 1869 April 7. | R. | Kabiruddin Ahmad, Maulawi. <i>Calcutta.</i> |
| 1878 Mar. 6. | N.R. | Keene, H. G., C. S. <i>Agra.</i> |
| 1874 Dec. 2. | N.R. | Khudábaksh Khan, Maulawi. <i>Patna.</i> |
| 1867 Dec. 4. | R. | King, G., M. B., F. L. S., Supdt., Royal Botanical Gardens. <i>Sibpur, Calcutta.</i> |
| 1881 Mar. 2. | N.R. | King, Lucas White, B. A., LL. B., C. S., Sub-Divisional Magistrate. <i>Rajampur.</i> |
| 1862 Jan. 15. | N.S. | King, W., Jr., B. A., F. G. S., Depy. Supdt. for Madras, Geol. Survey of India. <i>Europe.</i> |
| 1880 Dec. 1. | N.R. | Kirton, Surgeon-Major William Henry, F. L. S., Medical Store Keeper. <i>Mecan Meer, Panjab.</i> |
| 1880 Jan. 7. | R. | Kisch, H. M., M. A., C. S. <i>Calcutta.</i> |
| 1877 Jan. 17. | N.R. | Kishor, Kumara Radha Dev, Juvraj of Hill Tipperah. <i>Tipperah.</i> |
| 1875 Dec. 1. | R. | Knight, Hon'ble J. B., C. I. E. <i>Calcutta.</i> |
| 1878 Oct. 4. | N.R. | Lachman Singh, Raja. <i>Bulandshahr.</i> |
| 1877 Sept. 27. | N.R. | La Touche, James John Digges, B. A., C. S. <i>Banda.</i> |
| 1881 Feb. 2. | R. | Laughlin, Robert Campbell, Asst Supdt. Govt. Telegraph Department. <i>Calcutta.</i> |
| 1878 Aug. 7. | N.R. | Lawrie, Dr. E. <i>Lahore.</i> |
| 1881 Mar. 2. | R. | Lee, J. Bridges, M. A., F. G. S., F. C. S., F. Z. S., Barrister at Law. <i>Calcutta.</i> |
| 1879 Dec. 3. | N.R. | Leonard, G. S., Asst. Traffic Supdt., N. B. State Ry. <i>Saidpur.</i> |
| 1870 July 6. | N.S. | Lethbridge, E. Roper, M. A., C. I. E. <i>Europe.</i> |
| 1879 Mar. 5. | R. | Levinge, H. C., C. E., Offg. Secy. to the Govt. of Bengal, P. W. D. <i>Calcutta.</i> |
| 1880 July 7. | N.R. | Lewis, Rev. Arthur, B. A. <i>Dera Ghazi Khan.</i> |
| 1873 Feb. 5. | R. | Lewis, Timothy Richards, M. B., Special Asst. to the Sanitary Commissioner with the Government of India. <i>Calcutta.</i> |

| Date of Election. | | |
|-------------------|------|--|
| 1864 Nov. 2. | R. | Locke, H. H., Principal, School of Art. <i>Calcutta.</i> |
| 1866 Jan. 17. | F.M. | Low, James, Surveyor, G. T. Survey (retired). <i>Europe.</i> |
| 1869 July 7. | N.R. | Lyall, Charles James, B. A., c. s., Offg. Secy. to the Chief Commissioner of Assam. <i>Shillong.</i> |
| 1875 Jan. 6. | R. | Lydekker, Richard, Asst., Geol. Survey of India. <i>Geological Survey Office, Calcutta.</i> |
| 1870 April 6. | L.M. | Lyman, B. Smith. <i>Northampton, Mass., U. S., America.</i> |
| 1880 Dec. 1. | R. | McCann, H. W., M. A., D. sc., Professor, Presidency College. <i>Calcutta.</i> |
| 1868 Dec. 2. | N.R. | Macauliffe, Michael, B. A., c. s., Depy. Commissioner. <i>Gurgaon, Punjab.</i> |
| 1880 June 2. | N.R. | Macdonald, James, c. E. <i>Aligarh.</i> |
| 1879 Feb. 5. | N.S. | Macgregor, Major C. R., 44th N. I. <i>Europe.</i> |
| 1876 Jan. 5. | N.R. | Macgregor, W., Supdt., Telegraphs. <i>Dhubri, Assam.</i> |
| 1848 April 5. | L.M. | MacLagan, Major-General Robert, R. E., F. R. S. E., F. R. G. S. <i>Europe.</i> |
| 1873 Dec. 3. | R. | MacLeod, Surgeon-Major Kenneth, M. D. <i>Calcutta.</i> |
| 1880 May 5. | N.R. | MacLeod, Roderick Henry, B. C. S. <i>Basti.</i> |
| 1879 Aug. 28. | N.R. | Maconachie, R., c. s., Settlement Secy. to the Financial Commissioner. <i>Lahore.</i> |
| 1867 April 3. | R. | Mainwaring, Lieut.-Col. George Byres, s. c. <i>Soranpur.</i> |
| 1880 Mar. 3. | R. | Maliab, Ramesvar. <i>Howrah.</i> |
| 1878 April 3. | R. | Mallet, F. R., Geological Survey of India. <i>Calcutta.</i> |
| 1864 July 6. | R. | Mallik, Coomar Devendra. <i>Calcutta.</i> |
| 1869 Sept. 1. | R. | Mallik, Yadulal. <i>Calcutta.</i> |
| 1872 Nov. 6. | N.R. | Man, E. H., Asst. Supdt. <i>Port Blair, Andamans.</i> |
| 1880 May 5. | N.R. | Mandalik, The Hon. Rao Sahib Visvanath Narayana, c. s. i. <i>Bombay.</i> |
| 1869 July 7. | N.R. | Markham, Alexander Macaulay, c. s., Magistrate and Collector. <i>Allahabad.</i> |
| 1873 July 2. | N.R. | Marshall, C. W. <i>Berhampur, Bengal.</i> |
| 1873 Aug. 6. | N.S. | Marshall, Lieut.-Col William Elliot. |
| 1877 Feb. 7. | R. | Marshall, Major Geo. Fred. Leicester, R. E., Asst. Secy., Govt. of India, P. W. D. <i>Calcutta.</i> |
| 1860 Mar. 7. | R. | Medlicott, H. B., M. A., F. R. S., F. G. S., Supdt., Geological Survey of India. <i>Calcutta.</i> |
| 1877 Mar. 7. | R. | Medlycott, The Rev. Adolphus Edwin, PH.D., 3, <i>Cullen Place, Howrah.</i> |
| 1871 Sept. 6. | N.R. | Miles, Lieut.-Colonel S. B., s. c., Political Agent. <i>Muscat.</i> |
| 1870 July 6. | R. | Miller, A. B., B. A., Barrister at Law, Official Assignee. <i>Calcutta.</i> |
| 1874 May 6. | N.R. | Minchin, F. J. V. <i>Aska, Ganjam.</i> |
| 1875 Aug. 4. | N.R. | Minchin, Colonel C. C. <i>Hissar, Panjab.</i> |

| Date of Election. | | |
|-------------------|------|--|
| 1856 Mar. 5. | R. | Mitra, Rájendralála, Rái Bahádur, LL.D., C. I. E. <i>Calcutta.</i> |
| 1876 Dec. 6. | N.S. | Mockler, Major E., Political Agent. <i>Europe.</i> |
| 1874 July 1. | R. | Molesworth, G. L., C. E., Consulting Engineer to Govt. of India for State Railways. <i>Calcutta.</i> |
| 1881 May 4. | N.R. | Molloy, Major Edward, 5th Goorkhas. <i>Abbotabad, Hazara, Panjab.</i> |
| 1878 May 2. | N.S. | Moyle, J. C., Barrister at Law. <i>Arrah, Shahabad.</i> |
| 1864 Nov. 2. | N.R. | Mukerjee, Bhudeva, Inspector of Schools. <i>Chinsurah.</i> |
| 1879 May 7. | N.R. | Muir, J. W., M. A., C. S., Barrister at Law. <i>Meerut, N. W. P.</i> |
| 1867 Mar. 6. | R. | Mukerjee, The Hon. Pearimohan, M. A. <i>Uttarpara.</i> |
| 1880 Aug. 26. | R. | Mullick, Benod Behari. <i>Calcutta.</i> |
| 1880 Aug. 26. | N.R. | Nag, Sib Chunder. <i>Ohittagong.</i> |
| 1880 Dec. 1. | R. | Napier, J. R. <i>Calcutta.</i> |
| 1876 May 4. | R. | Nash, A. M., M. A., Professor, Presidency College. <i>Calcutta.</i> |
| 1865 Feb. 1. | R. | Nevill, G., C. M. Z. S., Indian Museum. <i>Calcutta.</i> |
| 1880 Aug. 26. | N.R. | Nicholson, Richardson Walter, Sub-Deputy Opium Agent. <i>Sultanpur, Oudh.</i> |
| 1869 July 7. | N.R. | Nursing Rao, A. V. <i>Vizagapatam.</i> |
| 1871 July 5. | N.S. | Oates, E. W., C. E., Engineer, P. W. D., Garrison Div., Sittang Canal. <i>Europe.</i> |
| 1874 Oct. 4. | R. | O'Kinealy, The Hon'ble James, C. S., District and Sessions Judge, 24-Pergannahs. <i>Calcutta.</i> |
| 1879 Aug. 28. | N.R. | Oldham, Surgeon-Major C. F., F. R. C. S. <i>Dhurm-sala, Panjab.</i> |
| 1880 Dec. 1. | N.R. | Oldham, R. D., A. B. S. M., Asst., Geological Survey of India. |
| 1873 Aug. 6. | N.R. | Olpherts, W. J., C. E., Manager, Kabarbari Collieries. <i>Giridhi, E. I. R.</i> |
| 1880 Aug. 4. | L.M. | Pandia, Pandit Mohanlall Vishnulall, F. T. S., Member and Secy., Royal Council of Meywar. <i>Oodeypur.</i> |
| 1880 Jan. 7. | R. | Pargiter, Frederick E., B. A., C. S., Officiating Commissioner of the Sunderbunds. <i>Calcutta.</i> |
| 1873 Aug. 6. | R. | Parker, J. C. <i>Calcutta.</i> |
| 1880 Jan. 7. | N.R. | Parry, J. W., C. E., Assoc. M. I. C. E., Asst. Engineer. <i>Bhiwani, via Delhi.</i> |
| 1862 May 7. | L.M. | Partridge, Surgeon-Major Samuel Bowen, M.D. <i>Europe.</i> |
| 1879 Mar. 5. | N.R. | Pawsey, R., C. S., Collector. <i>Cuttack.</i> |
| 1871 Dec. 6. | N.R. | Peal, S. E. <i>Aideo, via Sonari.</i> |
| 1860 Feb. 1. | N.R. | Pearse, Major-General G. G., C. B., R. H. A. <i>Utacamund.</i> |
| 1873 Aug. 6. | R. | Pedler, Alexander, F. C. S., Professor of Chemistry, Presidency College. <i>Calcutta.</i> |

| Date of Election. | | |
|-------------------|------|---|
| 1864 Mar. 2. | N.R. | Pellew, Fleetwood Hugo, c. s., Offg. Commissioner. <i>Dacca.</i> |
| 1865 Sept. 6. | N.R. | Peppe, T. E. <i>Ranchoi.</i> |
| 1881 Aug. 25. | R. | Percival, Hugh Melville, M. A., Professor, Presidency College. <i>Calcutta.</i> |
| 1877 Aug. 1. | N.R. | Peters, C. T., M. B., Civil Surgeon. <i>Karwar, Bombay Presidency.</i> |
| 1868 May 6. | R. | Peterson, F. W., H. M.'s Mint. <i>Calcutta.</i> |
| 1835 July 1. | F.M. | Phayre, Sir Arthur Purves, K. C. S. I., C. B. <i>Europe.</i> |
| 1872 Dec. 4. | R. | Pránnáth Sarasvati, Pandit, M. A., B. L. <i>Bhowanipur.</i> |
| 1880 June 2. | N.R. | Prasad Sinh, Thakur Garuradhawaya, Raja of Beswan. <i>Beswan Fort, Aligarh.</i> |
| 1877 Aug. 30. | N.R. | Pratapnarayan Singha, Depy. Magistrate. <i>Bankoora.</i> |
| 1881 Feb. 2. | R. | Prideaux, Major William Francis, B. S. C. <i>Calcutta.</i> |
| 1878 Feb. 6. | R. | Prinsep, The Hon'ble H. T., Judge of the High Court. <i>Calcutta.</i> |
| 1871 June 7. | R. | Ramkrishna. <i>Calcutta.</i> |
| 1877 May 2. | N.S. | Ravenshaw, Thomas Edw., C. S. <i>Europe.</i> |
| 1880 April 7. | N.R. | Rai, Bipina Chandra, B. L., Muunsif. <i>Netrokona, Maimansingh.</i> |
| 1868 April 1. | N.R. | Rái, Rájá Pramathanath. <i>Digapati.</i> |
| 1877 Aug. 1. | N.R. | Rees, J. C., Asst. Engr., P. W. D. <i>Thonzai, British Burmah.</i> |
| 1871 July 5. | N.R. | Reid, James Robert, c. s., Collector. <i>Bareilly, Rohilkund.</i> |
| 1881 Mar. 2. | R. | Reynolds, Herbert John, B. A., C. S. <i>Calcutta.</i> |
| 1880 Aug. 4. | N.R. | Reynolds, Herbert William Ward, C. S. <i>Allahabad.</i> |
| 1860 Jan. 3. | N.R. | Rivett-Carnac, John Henry, C. S., C. I. E., F. S. A., Opium Agent. <i>Ghazipur.</i> |
| 1863 April 1. | N.R. | Robertson, Charles, c. s., Secretary to the Govt., N. W. P. and Oudh. <i>Allahabad.</i> |
| 1878 Sept. 25. | R. | Robertson, Rev. J. <i>Calcutta.</i> |
| 1865 Feb. 1. | R. | Robinson, S. H. <i>Calcutta.</i> |
| 1870 Jan. 5. | N.R. | Ross, Major Alexander George, Staff Corps, 2nd in Comd., 1st Sikh Infy. <i>Dera Ghazi Khan, Panjab.</i> |
| 1880 Sept. 30. | N.R. | Sage, E. M. <i>Rangoon.</i> |
| 1877 May 2. | N.R. | Sandford, W., Assistant Traffic Manager, Nizam's State Railway. <i>Secunderabad, Deccan.</i> |
| 1878 Jan. 2. | R. | Sawyer, Capt. H. A., 14th Sikhs. <i>Fatehgarh, N.W.P.</i> |
| 1870 May 4. | N.R. | Schlich, Dr. W. <i>Lahore.</i> |
| 1879 May 7. | N.S. | Schroder, J. <i>Europe.</i> |
| 1869 Feb. 3. | F.M. | Schwendler, L., Telegraph Store Department. <i>Europe.</i> |
| 1879 Feb. 5. | R. | Sconce, Lt.-Col. J., B. S. C. <i>Calcutta.</i> |
| 1876 July 5. | N.R. | Scott, Ross, c. s., Assistant Magistrate and Collector. <i>Furrakhabad.</i> |
| 1874 July 1. | F.M. | Scully, Dr. John. <i>Europe.</i> |

| Date of Election. | | |
|-------------------|------|--|
| 1878 Mar. 6. | N.R. | Sen, Adharlal, B. A., Offg. Depy. Magistrate and Collector. <i>Jessore.</i> |
| 1874 Dec. 2. | N.R. | Sen, Dr. Rám Dás. <i>Berhampur.</i> |
| 1879 Jan. 8. | N.R. | Sewell, R., M. C. S. <i>Madras.</i> |
| 1878 May 2. | R. | Sharpe, C. J. <i>Calcutta.</i> |
| 1879 May 7. | N.R. | Sheridan, C. J., C. E. <i>Benares.</i> |
| 1881 Mar. 2. | N.R. | Shopland, E. R., Indian Marine, Port Officer. <i>Akyab.</i> |
| 1878 April 3. | R. | Simson, A. <i>Calcutta.</i> |
| 1867 April 3. | R. | Sirkár, Dr. Mahendralála. <i>Calcutta.</i> |
| 1872 Aug. 7. | N.S. | Skrefsrud, Rev. I. O., India Home Mission to the Santhals. <i>Europe.</i> |
| 1864 Sept. 7. | N.R. | Sladen, Col. E. B., M. S. C. <i>Akyab.</i> |
| 1874 June 3. | N.R. | Smith, Vincent Arthur, C. S., Asst. Settlement Officer. <i>Barcilly, N. W. P.</i> |
| 1879 Mar. 5. | N.S. | Someren, Capt. G. J. van. <i>Europe.</i> |
| 1877 April 4. | N.R. | Spens, The Rev. A. N. W., Chaplain. <i>Kurrachee.</i> |
| 1872 July 3. | N.R. | Stephen, Carr, B. L., Judl. Asst. Commr. <i>Ludi-anah.</i> |
| 1879 Oct. 2. | R. | Sterndale, R. A., F. R. G. S., Asst. Comr. of Currency. <i>Calcutta.</i> |
| 1875 July 7. | N.S. | Stewart, M. G. <i>Europe.</i> |
| 1878 July 3. | N.S. | St. Barbe, H. L., C. S. <i>Europe.</i> |
| 1876 Aug. 2. | N.R. | St. John, Lieut.-Col. Oliver Beauchamp, R. E., C. S. I., Agent to the Governor-General in Biluchistan. |
| 1861 Sept. 4. | R. | Stokes, The Hon'ble Whitley, C. S. I., C. I. E. <i>Calcutta.</i> |
| 1869 Feb. 3. | N.S. | Strachey, Sir J., K. C. S. I., C. I. E. <i>Europe.</i> |
| 1859 Mar. 2. | N.R. | Stubbs, Lieut.-Col. Francis William, Royal Artillery. |
| 1880 Nov. 3. | N.R. | Sturt, Lieut. Robert Ramsay Napier, B. S. C., Panjab Frontier Force. <i>Edwardesabad, Panjab.</i> |
| 1864 Aug. 11. | R. | Swinhoe, W., Attorney-at-Law. <i>Calcutta.</i> |
| 1880 Nov. 3. | N.R. | Swynnerton, Rev. Charles. <i>Naushera.</i> |
| 1880 June 2. | N.R. | Sykes, John Gastrell, LL.B., Barrister-at-Law and Advocate, High Court, N. W. P. <i>Allahabad.</i> |
| 1868 June 3. | R. | Tagore, The Hon'ble Maharaja Jotendra Mohun, C. S. I. <i>Calcutta.</i> |
| 1865 Sept. 6. | R. | Tawney, C. H., M. A., Principal, Presidency College. <i>Calcutta.</i> |
| 1874 Mar. 4. | R. | Taylor, Commander A. D., late Indian Navy. <i>Calcutta.</i> |
| 1860 May 2. | N.S. | Temple, Sir R., Bart., K. C. S. I., C. I. E., B. C. S. <i>Europe.</i> |
| 1878 June 5. | N.R. | Temple, Lieut. R. C., S. C. <i>Ambala.</i> |
| 1876 Feb. 2. | R. | Tennant, Col. James Francis, R. E., F. R. S., C. I. E., Mint Master. <i>Calcutta.</i> |
| 1875 June 2. | N.R. | Thibaut, Dr. G., Professor, Sanskrit College. <i>Benares.</i> |
| 1869 Oct. 6. | N.R. | Thomson, A., The College. <i>Agra.</i> |

| Date of Election. | | |
|-------------------|------|--|
| 1875 Nov. 3. | N.R. | Thomson, Robert George, c. s., Asst. Comr. <i>Jhelum, Panjab.</i> |
| 1847 June 2. | L.M. | Thuillier, Major-Genl. Sir Henry Edward Landor, R. A., C. S. I., F. R. S. <i>Europe.</i> |
| 1865 July 5. | N.R. | Tolbort, Thos. Wm. Hooper, c. s., Offg. Deputy Commissioner. <i>Gujranwala.</i> |
| 1871 April 5. | F.M. | Treffitz, Oscar. <i>Europe.</i> |
| 1861 June 5. | L.M. | Tremlett, James Dyer, M. A., c. s. Addl. Commissioner. <i>Jalandhar, Panjab.</i> |
| 1872 July 3. | R. | Trevor, Colonel William Spottiswoode, R. E., With the Supreme Govt. <i>Calcutta.</i> |
| 1880 Mar. 3. | F.M. | Tufnell, Lieut. R. H. C., 30th M. N. I. <i>Europe.</i> |
| 1873 April 6. | R. | Turnbull, Robert, Secretary to the Corporation. <i>Calcutta.</i> |
| 1863 May 6. | N.R. | Tyler, J. W., M. D., F. R. C. S., Supdt., Central Prison. <i>Agra.</i> |
| 1869 Aug. 4. | R. | Wáhid Alí, Prince Jahán Qadr Muhammad, Bahádur. <i>Garden Reach.</i> |
| 1865 Nov. 1. | R. | Waldie, David, F. C. S. <i>Calcutta.</i> |
| 1861 May 1. | R. | Walker, Lieut.-Genl. James T., R. E., C. B., F. R. S., Surveyor General of India. <i>Calcutta.</i> |
| 1875 April 7. | N.S. | Wall, Dr. Alfred John. <i>Europe.</i> |
| 1863 Oct. 7. | N.S. | Waller, Walter Kerr, M. B. <i>Europe.</i> |
| 1865 May 3. | R. | Waterhouse, Major James, B. S. C., Dy. Supdt., Survey of India. <i>Calcutta.</i> |
| 1874 July 1. | N.R. | Watt, Dr. George. <i>Munipore.</i> |
| 1876 Dec. 6. | R. | Webb, W. T., M. A., Professor, Presidency College. <i>Calcutta.</i> |
| 1879 Mar. 5. | N.R. | Weekes, A., c. s., Magistrate and Collector. <i>Purneah.</i> |
| 1869 Sept. 1. | R. | Westland, James, c. s., Offg. Comptroller General. <i>Calcutta.</i> |
| 1867 Feb. 6. | N.R. | Westmacott, Edward Vesey, B. A., c. s., Offg. Magt. and Collr. <i>Noakholly.</i> |
| 1862 Oct. 8. | N.S. | Wheeler, James Talboys. <i>Europe.</i> |
| 1878 Aug. 29. | N.R. | Wheeler, P. C., c. s., Asst. Magistrate. <i>Ghazipur.</i> |
| 1875 Feb. 3. | N.R. | Whiteway, Richard Stephen, c. s., Asst. Settlement Officer. <i>Aligarh.</i> |
| 1878 Aug. 29. | N.R. | Whittall, R., Forest Dept. <i>Hoshangabad, Central Provinces.</i> |
| 1873 May 7. | N.R. | Williams, George Robert Carlisle, B. A., c. s., Magt. and Collr. <i>Farakhabad.</i> |
| 1867 Jan. 16. | F.M. | Williamson, Capt. William John, C. I. E., Insp.-Genl of Police. <i>Europe.</i> |
| 1880 Feb. 4. | R. | Wilson, The Hon. Arthur. <i>Calcutta.</i> |
| 1870 Aug. 3. | N.R. | Wilson, Robert Henry, B. A., c. s., Magt. and Collector. <i>Midnapur.</i> |

| Date of Election. | | |
|-------------------|------|---|
| 1878 Mar. 6. | N.R. | Wilson, J. <i>Sirsa, Punjab.</i> |
| 1866 Mar. 7. | L.M. | Wise, Dr. J. F. N. <i>Rostellan, County Cork. Ireland.</i> |
| 1867 July 3. | N.R. | Wood, Dr. Julius John, Supdt. of Vaccination. <i>Darjiling Circle.</i> |
| 1870 Jan. 5. | R. | Wood-Mason, James, Depy. Supdt., Indian Museum. <i>Calcutta.</i> |
| 1873 Aug. 6. | N.S. | Woodthorpe, Lieut.-Col. Robert Gossett, R. E., Asst. Supdt., Survey of India. <i>Europe.</i> |

HONORARY MEMBERS.

| | | |
|---------------|--|--|
| 1847 Nov. 3. | | His Highness the Nawáb Nazim of Bengal. <i>Europe.</i> |
| 1848 Feb. 2. | | Sir J. D. Hooker, K. C. S. I., C. B., M. D., D. C. L., F. R. S., F. G. S. <i>Kew.</i> |
| 1853 April 6. | | Major-General H. C. Rawlinson, K. C. B., D. C. L., F. R. S. <i>London.</i> |
| 1858 July 6. | | B. H. Hodgson. <i>Europe.</i> |
| 1860 Mar. 7. | | Professor Max Müller. <i>Oxford.</i> |
| 1860 Nov. 7. | | Edward Thomas, F. R. S. <i>London.</i> |
| 1860 Nov. 7. | | Dr. Aloys Sprenger. <i>Heidelberg.</i> |
| 1860 Nov. 7. | | Dr. Albrecht Weber. <i>Berlin.</i> |
| 1868 Feb. 5. | | General A. Cunningham, C. S. I. <i>India.</i> |
| 1868 Feb. 5. | | Professor Bápu Deva Sástri. <i>Benares.</i> |
| 1868 Sept. 2. | | A. Grote. <i>London.</i> |
| 1871 June 7. | | Charles Darwin, M. A., F. R. S., F. G. S., F. L. S. <i>London.</i> |
| 1872 May 1. | | Sir G. B. Airy, K. C. B., M. A., D. C. L., LL. D., F. R. S. <i>London.</i> |
| 1872 June 5. | | Prof. T. H. Huxley, LL. D., PH. D., F. R. S., F. G. S., F. Z. S., F. L. S. <i>London.</i> |
| 1875 Nov. 3. | | Dr. O. Böhtlingk. <i>Jena.</i> |
| 1875 Nov. 3. | | Prof. J. O. Westwood. <i>Oxford.</i> |
| 1876 April 5. | | Col. H. Yule, R. E., C. B. <i>London.</i> |
| 1876 April 5. | | Dr. Werner Siemens. <i>Berlin.</i> |
| 1877 Jan. 17. | | Dr. John Muir. <i>Edinburgh.</i> |
| 1879 June 4. | | Prof. E. B. Cowell, D. C. L. <i>Cambridge.</i> |
| 1879 June 4. | | Dr. A. Günther, V. P. R. S. <i>London.</i> |
| 1879 June 4. | | Dr. J. Janssen. <i>Paris.</i> |
| 1879 June 4. | | Prof. H. Milne-Edwards. <i>Paris.</i> |
| 1879 June 4. | | Prof. P. Regnaud. <i>Lyons.</i> |
| 1879 June 4. | | E. Renan. <i>Paris.</i> |
| 1881 Dec. 7. | | Professor Hermann L. F. Helmholtz. <i>Berlin.</i> |
| 1881 Dec. 7. | | Dr. Rudolph v. Roth. <i>Tübingen.</i> |
| 1881 Dec. 7. | | Sir William Thomson, Knt., LL. D., F. R. S., F. R. S. E. <i>Glasgow.</i> |
| 1881 Dec. 7. | | Professor William Wright, LL. D. <i>Cambridge.</i> |

CORRESPONDING MEMBERS.

| | | | |
|-----------|----|---|---------------------|
| 1844 Oct. | 2. | Macgowan, Dr. J. | <i>Europe.</i> |
| 1856 July | 2. | Krämer, Herr A von. | <i>Alexandria.</i> |
| 1856 „ | 2. | Porter, Rev. J. | <i>Damascus.</i> |
| 1856 „ | 2. | Schlagintweit-Sakünlünski, Herr Baron H. von. | <i>Munich.</i> |
| 1856 „ | 2. | Smith, Dr. E. | <i>Beyrout.</i> |
| 1856 „ | 2. | Tailor, J., Esq. | <i>Bussorah.</i> |
| 1857 Mar. | 4. | Nietner, J., Esq. | <i>Ceylon.</i> |
| 1858 „ | 3. | Schlagintweit, Herr R. von. | <i>Berlin.</i> |
| 1859 Nov. | 2. | Frederick, Dr. H. | <i>Batavia.</i> |
| 1860 Feb. | 1. | Baker, The Rev. H. | <i>E. Malabar.</i> |
| 1861 July | 3. | Gösche, Dr. R. | |
| 1862 Mar. | 3. | Murray, A., Esq. | <i>London.</i> |
| 1863 July | 4. | Barnes, R. H., Esq. | <i>Ceylon.</i> |
| 1866 May | 7. | Schlagintweit, Prof. E. von. | <i>Berlin.</i> |
| 1868 „ | 5. | Holmbøe, Prof. | <i>Christiania.</i> |

ASSOCIATE MEMBERS.

| | | | |
|------------|----|--------------------------------------|-------------------|
| 1865 May | 3. | Dall, Rev. C. H. | <i>Calcutta.</i> |
| 1874 Feb. | 4. | Schaumburgh, J., Esq. | <i>Calcutta.</i> |
| 1874 April | 1. | Lafont, Rev. Fr. E., s. j., c. i. E. | <i>Calcutta.</i> |
| 1875 Dec. | 1. | Bate, Rev. J. D. | <i>Allahabad.</i> |
| 1875 „ | 1. | Maulawí Abdul Hai, Madrasah. | <i>Calcutta.</i> |

LIST OF MEMBERS WHO HAVE BEEN ABSENT FROM INDIA
THREE YEARS AND UPWARDS.*

* *Rule 40.*—After the lapse of 3 years from the date of a Member leaving India, if no intimation of his wishes shall in the interval have been received by the Society, his name shall be removed from the list of Members.

The following Member will be removed from the next Member List of the Society under the operation of the above Rule:

Lieut.-Col. Wm. Elliot Marshall.

BY RETIREMENT.

J. G. Apear, Esq. *Calcutta*.
 H. K. W. Arnold, Esq. *Lahore*.
 C. E. Buckland, Esq. *Howrah*.
 Dr. J. M. Coates. *Calcutta*.
 H. A. Cockerell, Esq. *Calcutta*.
 Hon. B. W. Colvin. *Calcutta*.
 Dr. G. E. Dobson. *England*.
 Babu Jogesh Chunder Dutt. *Calcutta*.
 W. Lambe, Esq. *Jaunpur*.
 Major M. Protheroe. *Port Blair*.
 The Lord Bishop of Rangoon. *Rangoon*.
 Dr. D. B. Smith. *Murree*.
 Babu Dvijeudronath Tagore. *Calcutta*.

BY DEATH.

Major-Gen. E. T. Dalton. *London*.
 Capt. W. H. Johnstone, R. E. *England*.
 Kumar Kantichandra Singh. *Calcutta*.
 L. Mandelli, Esq. *Darjiling*.
 C. Magrath, Esq. *Rangpur*.
 W. M. Souttar, Esq. *England*.
 Babu Gunendronath Tagore. *Calcutta*.

BY REMOVAL.

Under Rule 40.

Major-Gen. C. H. Dickens.
 J. R. E. Gouldsbury, Esq.
 Lieut.-Col. J. Macdonald, Esq.
 Col. G. B. Malleson.
 Lieut. G. S. Rodon.

ELECTIONS CANCELLED.

Under Rule 9.

J. A. Brown, Esq. *Benares*.
 Rev. J. S. Doxey. *Multan*.
 R. O. Lees, Esq. *Calcutta*.

[APPENDIX.]

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY OF BENGAL
FOR
THE YEAR 1881.

STATEMENT

Asiatic Society

Dr.

To ESTABLISHMENT.

| | | | | |
|----------------|-----|-----|-----|----------------|
| Salaries ... | ... | ... | ... | Rs. 4,441 10 3 |
| Commission ... | ... | ... | ... | ... 359 5 11 |
| Pensions ... | ... | ... | ... | ... 228 0 0 |
| | | | | <hr/> |
| | | | | 5,029 0 2 |
| | | | | <hr/> |

CONTINGENCIES.

| | | | | |
|-------------------|-----|-----|-----|--------------|
| Stationery ... | ... | ... | ... | ... 212 3 6 |
| Lighting ... | ... | ... | ... | ... 75 0 0 |
| Building ... | ... | ... | ... | ... 461 8 9 |
| Taxes ... | ... | ... | ... | ... 726 0 0 |
| Postage ... | ... | ... | ... | ... 976 10 9 |
| Freight ... | ... | ... | ... | ... 49 4 4 |
| Meetings ... | ... | ... | ... | ... 113 2 0 |
| Miscellaneous ... | ... | ... | ... | ... 422 5 6 |
| | | | | <hr/> |
| | | | | 3,036 2 10 |
| | | | | <hr/> |

LIBRARY AND COLLECTIONS.

| | | | | |
|-----------------------|-----|-----|-----|----------------|
| Books ... | ... | ... | ... | ... 1,453 3 10 |
| Local Periodicals ... | ... | ... | ... | ... 49 13 0 |
| Binding ... | ... | ... | ... | ... 560 2 0 |
| Coins ... | ... | ... | ... | ... 90 0 6 |
| Catalogue ... | ... | ... | ... | ... 600 0 0 |
| | | | | <hr/> |
| | | | | 2,753 3 4 |
| | | | | <hr/> |

PUBLICATIONS.

| | | | | |
|--------------|-----|-----|-----|---------------|
| Printing ... | ... | ... | ... | ... 5,814 8 3 |
| Plates ... | ... | ... | ... | ... 3,381 6 4 |
| | | | | <hr/> |
| | | | | 9,195 14 7 |
| | | | | <hr/> |

| | | | | |
|---|-----|-----|-----|---------------|
| | | | | 20,014 4 11 |
| To PERSONAL ACCOUNT (Writes off and Miscellaneous) .. | ... | ... | ... | 1,396 3 4 |
| To Balance ... | ... | ... | ... | 1,42,595 0 10 |
| | | | | <hr/> |
| Total Rs. ... | | | | 1,64,005 9 1 |
| | | | | <hr/> |

No. 1. of Bengal.

Cr.

| | | | | |
|-----------------------------|-----|-----|-----|--------------------|
| By Balance from last Report | ... | ... | ... | Rs. 1,44,416 14 11 |
|-----------------------------|-----|-----|-----|--------------------|

By CASH RECEIPTS.

| | | | | |
|----------------------------|-----|-----|-----|------------------------|
| Publications sold for Cash | ... | ... | ... | 94 8 0 |
| Interest on investments | ... | ... | ... | 6,621 8 0 |
| Advances recovered | ... | ... | ... | 300 14 0 |
| Miscellaneous | ... | ... | ... | 105 15 0 |
| | | | | <hr/> 7,122 13 0 <hr/> |

By PERSONAL ACCOUNT.

| | | | | | |
|--|-----|-----|-----|-----|-------------------------|
| Admission fees | ... | ... | ... | ... | 880 0 0 |
| Subscriptions | ... | ... | ... | ... | 8,798 0 0 |
| Sales on credit | ... | ... | ... | ... | 1,075 14 0 |
| Miscellaneous (chiefly old outstandings and omissions brought to credit) | ... | ... | ... | ... | 1,711 15 2 |
| | | | | | <hr/> 12,465 13 2 <hr/> |

| | | | |
|--------------|-------|-------|-------------|
| Total Income | <hr/> | <hr/> | 19,589 10 2 |
|--------------|-------|-------|-------------|

| | | | |
|---------------|-------|-------|--------------|
| Total Rs. ... | <hr/> | <hr/> | 1,64,005 9 1 |
|---------------|-------|-------|--------------|

J. ELIOT.

Hony. Secretary and Treasurer.

J. WESTLAND.

F. W. PETERSON.

} Auditors.

STATEMENT

Oriental Publication Fund in Account

Dr.

To CASH EXPENDITURE.

| | | | | |
|--------------------------------|-----|-----|-----|----------------|
| Printing charges | ... | ... | ... | Rs. 4,856 14 0 |
| Editing charges | ... | ... | ... | ... 3,245 5 0 |
| Salaries | ... | ... | ... | ... 1,018 0 9 |
| Advertising | ... | ... | ... | ... 120 0 0 |
| Freight | ... | ... | ... | ... 29 2 0 |
| Contingencies | ... | ... | ... | ... 52 13 0 |
| Postage | ... | ... | ... | ... 209 1 0 |
| Commission on collecting bills | ... | ... | ... | ... 25 5 0 |

9,566 8 9

To PERSONAL ACCOUNT (writes off and Miscellaneous) ... 10 15 0

Total Expenditure 9,567 7 9

To Balance ... 12,536 9 11

Total Rs. ... 22,104 1 8

No. 2.

with the Asiatic Society of Bengal.

Cr.

| | | | | |
|-----------------------------|-----|-----|-----|-----------------|
| By Balance from last Report | ... | ... | ... | Ra. 10,540 9 11 |
|-----------------------------|-----|-----|-----|-----------------|

BY CASH RECEIPTS.

| | | | | |
|----------------------|-----|-----|-----|-----------|
| Government allowance | ... | ... | ... | 9,000 0 0 |
|----------------------|-----|-----|-----|-----------|

| | | | | |
|----------------------------|-----|-----|-----|------------|
| Publications sold for cash | ... | ... | ... | 1,368 15 5 |
|----------------------------|-----|-----|-----|------------|

| | | | | |
|--|--|--|--|-------------------|
| | | | | <u>0,368 15 5</u> |
|--|--|--|--|-------------------|

BY PERSONAL ACCOUNT.

| | | | | |
|-----------------|-----|-----|-----|-----------|
| Sales on credit | ... | ... | ... | 1,194 8 4 |
|-----------------|-----|-----|-----|-----------|

| | | | |
|--------------|-------------------|--|--|
| Total Income | <u>11,563 7 9</u> | | |
|--------------|-------------------|--|--|

| | |
|---------------|-------------------|
| Total Ra. ... | <u>22,104 1 8</u> |
|---------------|-------------------|

J. ELIOT.

Hony. Secretary and Treasurer.

J. WESTLAND.

F. W. PETERSON.

} *Auditors.*

STATEMENT

Sanskrit Manuscripts Fund in Account

Dr.

| To CASH EXPENDITURE. | | | | | |
|--|-----|-----|-----|-----|---------------------------------|
| Salaries | ... | ... | ... | ... | Rs 1,484 0 0 |
| Travelling expenses | ... | ... | ... | ... | 223 2 0 |
| Printing | ... | ... | ... | ... | 659 4 0 |
| MSS. purchased | ... | ... | ... | ... | 1,232 3 2 |
| Stationery | ... | ... | ... | ... | 41 2 0 |
| Postage | ... | ... | ... | ... | 3 6 0 |
| Copying | ... | ... | ... | ... | 113 4 0 |
| Contingencies | ... | ... | ... | ... | 17 6 6 |
| | | | | | <u>3,773 11 8</u> |
| To PERSONAL ACCOUNT (Writes off and Miscellaneous) | | | | | 30 0 0 |
| Total Expenditure | | | | | <u>3,803 11 8</u> |
| To Balance | ... | ... | ... | ... | 1,563 2 6 |
| | | | | | <u>Total Rs. ... 5,366 14 2</u> |

No. 3.

with the Asiatic Society of Bengal.

Cr.

| | | | | |
|-----------------------------|-----|-----|-----|----------------|
| By Balance from last Report | ... | ... | ... | Ra. 2,131 14 2 |
|-----------------------------|-----|-----|-----|----------------|

BY CASH RECEIPTS.

| | | | | |
|----------------------------|-----|-----|-----|------------------|
| Government allowance | ... | ... | ... | 3,200 0 0 |
| Publications sold for cash | ... | ... | ... | 5 0 0 |
| | | | | <u>3,205 0 0</u> |

BY PERSONAL ACCOUNT.

| | | | | |
|-----------------------------|-----|-----|-----|---------------------|
| Publications sold on credit | ... | ... | ... | 30 0 0 |
| | | | | <u>Total Income</u> |
| | | | | 3,235 0 0 |

| | |
|---------------|-------------------|
| Total Rs. ... | <u>5,366 14 2</u> |
|---------------|-------------------|

J. ELIOT.

Hony. Secretary and Treasurer.

J. WESTLAND.

F. W. PETERSON.

} *Auditors.*

STATEMENT

Personal

Dr.

| | | | | |
|-----------------------------|-----|-----|-----|----------------|
| To Balance from last Report | ... | ... | ... | Ra. 6,980 5 11 |
|-----------------------------|-----|-----|-----|----------------|

To CASH EXPENDITURE.

Advances for purchase of Sanskrit MSS., postage of books

| | | | | | |
|---|-----|-----|-----|-----|-------------------|
| to Members, &c. | ... | ... | ... | ... | 2,928 15 8 |
| To Asiatic Society | ... | ... | ... | ... | 12,465 13 2 |
| To Oriental Publication Fund | ... | ... | ... | ... | 1,194 8 4 |
| To Sanskrit Manuscripts Preservation Fund | ... | ... | ... | ... | 30 0 0 |
| To Trust Funds | ... | ... | ... | ... | 54 3 4 |
| | | | | | <u>16,673 8 6</u> |

| | |
|---------------|--------------------|
| Total Rs. ... | <u>23,653 14 5</u> |
|---------------|--------------------|

No. 4.

Account.

Cr.

| | | | | | | | |
|---|-----|-----|-----|-----|--------|----|---|
| By Cash Receipts | ... | ... | ... | Rs. | 16,546 | 8 | 7 |
| By Asiatic Society | ... | ... | ... | ... | 1,396 | 3 | 4 |
| By Oriental Publication Fund | ... | ... | ... | ... | 10 | 15 | 0 |
| By Sanskrit Manuscripts Preservation Fund | ... | ... | ... | ... | 30 | 0 | 0 |

| By Balances. | Due to the Society. | | | Due by the Society. | | |
|-----------------------------|---------------------|-------|-------|---------------------|-----|-----|
| Old Claims | ... | 1,125 | 11 0 | ... | ... | ... |
| Members | ... | 4,311 | 11 11 | 199 | 9 | 9 |
| Subscribers to Publications | ... | 813 | 0 2 | 2,058 | 7 | 6 |
| Employees | ... | 30 | 0 0 | 170 | 0 | 0 |
| Agents | ... | 1,718 | 11 1 | ... | ... | ... |
| Miscellaneous | ... | 231 | 7 10 | 132 | 5 | 3 |
| | | 8,230 | 10 0 | 2,660 | 6 | 6 |

5,670 3 6

Total Rs. ... 23,653 14 5

J. ELIOT.

Hony. Secretary and Treasurer.

J. WESTLAND.

F. W. PETERSON,

} *Auditors.*

STATEMENT

Invest

| Dr. | | Nominal. | Actual. |
|-----------------------------|-----|------------------|--------------|
| To Balance from last Report | ... | Rs. 1,48,300 0 0 | 1,47,618 0 0 |
| Total Rs. ... | | 1,48,300 0 0 | 1,47,618 0 0 |

STATEMENT

Trust

| Dr. | | |
|---------------------------------------|-----|------------|
| To Balances { Blochmann Memorial Fund | Rs. | 54 3 4 |
| { Servants' Pension Fund ... | ... | 1,007 11 4 |
| | | 1,061 14 8 |
| Total Rs. ... | | 1,061 14 8 |

STATEMENT

Cash.

| Dr. | | |
|------------------------------|-----|----------------|
| To Balance from last Report | ... | Rs. 3,498 12 6 |
| RECEIPTS. | | |
| To Personal Account ... | ... | 16,546 8 7 |
| To Asiatic Society ... | ... | 7,122 13 0 |
| To Oriental Publication Fund | ... | 10,368 15 5 |
| To Sanskrit Manuscripts Fund | ... | 3,205 0 0 |
| Total Rs. ... | | 40,742 1 5 |

No. 5. ments.

| | | | | Cr. | | | |
|---------------|-----|-----|-----|----------|--------------|--------------|--|
| | | | | Nominal. | | Actual. | |
| By Balance | ... | ... | ... | Rs. | 1,48,300 0 0 | 1,47,618 0 0 | |
| Total Rs. ... | | | | | 1,48,300 0 0 | 1,47,618 0 0 | |

J. ELIOT.

Hony. Secretary and Treasurer.

J. WESTLAND.

F. W. PETERSON.

} *Auditors.*

No. 6. Funds.

| | | | | Cr. | | | |
|---|-----|-----|-----|-----|------------|--|--|
| By Balance (being Servants' Pension Fund only) from | | | | | | | |
| last Report | ... | ... | ... | Rs. | 1,007 11 4 | | |
| By Personal Account (being refund on account of | | | | | | | |
| Blochmann Memorial) | ... | ... | ... | | 54 3 4 | | |
| Total Rs., ... | | | | | 1,061 14 8 | | |

J. ELIOT.

Hony. Secretary and Treasurer.

J. WESTLAND.

F. W. PETERSON.

} *Auditors.*

No. 7.

| | | | | Cr. | | | |
|------------------------------|-----|-----|-----|-----|-------------|--|--|
| EXPENDITURE. | | | | | | | |
| By Personal Account | ... | ... | ... | Rs. | 2,928 15 8 | | |
| By Asiatic Society | ... | ... | ... | | 20,014 4 11 | | |
| By Oriental Publication Fund | ... | ... | ... | | 9,556 8 9 | | |
| By Sanskrit Manuscripts Fund | ... | ... | ... | | 3,773 11 8 | | |
| By Balance | ... | ... | ... | | 4,468 8 5 | | |
| Total Rs. ... | | | | | 40,742 1 5 | | |

J. ELIOT.

Hony. Secretary and Treasurer.

J. WESTLAND.

F. W. PETERSON.

} *Auditors.*

STATEMENT NO. 8.

Balance Sheet.

| Dr. | | Cr. | |
|------------------------------|-----|---|-----|
| To Personal Account | ... | By Asiatic Society | ... |
| To Cash | ... | By Sanskrit Manuscripts Fund | ... |
| To Investments | ... | By Oriental Publication Fund | ... |
| | | By Trust Funds | ... |
| Total Rs. ... 1,57,756 11 11 | | Total Rs. ... 1,57,756 11 11 | |
| | | <div> <div>J. Elliot.</div> <div>Hon'y. Secretary and Treasurer.</div> </div> <div> <div>J. WESTLAND.</div> <div>F. W. PETERSON.</div> </div> <div> <div>Auditors.</div> </div> | |

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR JANUARY, 1882.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th January, 1882, at 9 P. M.

The HON'BLE SIR ASHLEY EDEN, K. C. S. I., President, in the Chair. The minutes of the last Meeting were read and confirmed.

The following presentations were announced :—

1. From the Home Department,—Archæological Survey of India. Reports, Vol. XII.
2. From the Revenue and Agricultural Department,—Punjab Customary Law, Vols. I—III, by C. L. Tupper.
3. From the Foreign Department,—Notes on Afghanistan and part of Biluchistan, Section III, by Major H. G. Raverty.
4. From the Bengal Government,—Archæological Survey of India. Reports, Vol. XII.
5. From the Geological Survey of India,—A Manual of the Geology of India. Vol. III (Economic Geology), by V. Ball.
6. From the Surveyor General of India,—Map of India, 1881.
7. From the Superintendent in charge, Tidal and Levelling Operations, Survey of India,—(1) Tide-Tables for the Indian Ports for 1882, by Capt. A. W. Baird and E. Roberts.—(2) Tide-Tables for the River Hooghly, Diamond Harbour, Fort Gloster and Kidderpore, for 1882, by Capt. A. W. Baird and E. Roberts.—(3) Tide-Table for the River Hooghly, 1882, by Capt. A. W. Baird and E. Roberts.
8. From the Meteorological Reporter for Western India,—Brief sketch of the Meteorology of the Bombay Presidency in 1880.
9. From the Authors,—(1) On the Land Molluscan Genus *Durgella*, W. T. Blanford; with notes on its anatomy and description of a new species, by Lieut.-Col. H. H. Godwin-Austen.—(2) Description of the Animal of *Durgella christianæ*, a species of Land-shell from the Andaman

Islands, by Lieut.-Col. H. H. Godwin-Austen.—(3) Address before the American Association for the Advancement of Science at Cincinnati, Ohio, August 1881, by Col. G. Mallery.—(4) The Hindu and Roman Law of Adoption, by D. M. Gardner.—(5) Report on the Census of the Town and Suburbs of Calcutta, taken on 17th February 1881. Compiled by H. Beverley.

10. From the Secretary, Clarendon Press, Oxford,—*Anecdota Oxoniensia*. Texts, Documents, and Extracts chiefly from MSS. in the Bodleian and other Oxford Libraries. Aryan Series, Vol. I, Pt. I. Buddhist Texts from Japan, by F. Max Müller.

11. From the Munich Academy,—(1) *Gedächtnisrede auf Leonhard von Spengel*, by Wilhelm von Christ.—(2) *Die Wittelsbacher in Schweden*, by Karl Theodor Heigel.

12. From the Department of Agriculture, U. S., America,—*Annual Report for 1878 and 1879*.

13. From the Smithsonian Institution,—*A memorial of Joseph Henry*.

14. From the Boston Society of Natural History,—*Anniversary Memoirs of the Boston Society of Natural History, 1830-1880*.

The following gentleman was balloted for and elected an Ordinary Member:—

Babu Girijabhusan Mukerji.

The following gentlemen have intimated their desire to withdraw from the Society:—

D. M. Gardner, Esq.

J. W. Alexander, Esq.

H. G. Keene, Esq.

Ramesvar Maliah, Esq.

Major A. G. Ross.

The COUNCIL announced that Mr. A. Pedler had consented to act as Treasurer during the temporary absence of Mr. J. Eliot.

The SECRETARY read a letter from the Under-Secretary to the Government of Bengal forwarding a copy of a letter from the Commissioner of the Orissa Division, reporting on the origin and growth of the sect of the Hindu Dissenters who profess to be the followers of Alekh.

The Commissioner of the Orissa Division writes:—

"1. The founder of the sect is said to have been one Mukund Dás.

He lived for a long time in Puri as an *Āchāri* Vaishnava, and was known as the *Dhula Bābājī* from the fact of his daubing his body with ashes.

"2. About thirty years ago he left Puri and came to Dhenkanal, one of the Tributary States of Cuttack, where he selected as his dwelling-place the *Kapilās* hills near a shrine of *Mahādev*. During the first twelve years of his residence at *Kapilās*, *Mukund Dās* lived on fruits and accordingly was known as the *Phalāhāri Bābājī*. The next twelve years were passed on milk and water which secured him the cognomen of *Kshira-nira-pāyi*.

"During his sojourn at *Kapilās*, he was known to be a devout worshipper of the local idol, and took much pains in improving the place by cutting the jungle, making gardens, looking after the *Bhog* or sacred food of the idol, and taking care of the pilgrims who visit the hills periodically. This procured him the respect of the mother of the late *Mahārājā* of Dhenkanal, who supplied his food. He gradually succeeded in securing the respect of the people of the surrounding villages, and the popular belief was that he was in secret communion with the idol and could successfully intercede with it on behalf of its votaries. The currency of this belief was further facilitated by the fact of his taking special care of the sick people who resorted to *Kapilās* for the benefit of their health, and very generally succeeded in getting it restored, and his visiting the temple at the dead of night while every one had retired to rest.

"3. After thus remaining at *Kapilās* for several years, and finding that he had sufficiently established his reputation and secured the respect of the people, *Mukund Dās* left the place and began to preach that *Mahādev* and the other idols worshipped by the Hindus were nothing else but stone and wood, and that the worship of these destructible articles was useless and of no avail, that the Creator of the universe was *Alekh* or *Mahimā* (which literally means 'glorious') a spiritual Being without form, omnipresent and omniscient, and that he alone could hold communion with him and get his prayers granted. He eschewed his *kaupin* (waist cloth) and *kanṭhi* (wooden beads worn round the neck), the two distinctive features in the raiment of a Vaishnava, and wore *kumbhipat* (the bark of a tree called *kumbhi*) to cover his nakedness.

"4. From *Kapilās*, *Mukund Dās* went to Puri, where he remained for some time in a hut on the sands near the temple of *Lokanāth Mahādev*. He next came to Daruteng in the Government state of Khorda in Puri where he built a *tungī* (a place of worship), and commenced to propagate the new doctrine. It was at this place that *Mukund Dās* was deified and began to be addressed as the *Mahimā Gosain*. It appears that one *Gobind Dās* was his first, and *Narsing Dās* his second disciple; others followed their example, and in course of time all these followers dispersed on all sides for

the propagation of the new doctrine ; shortly after a place of worship was established at Malbehárpur in Kellah Banky ; other places were opened in some of the remaining Tributary States as well as in Sambalpur, Puri and Cuttack. At some of these places of worship, the Mahimá Gosain gave large feasts, which were numerous attended. In 1875 in the month of Kártic on the day of the full moon, a fair was held at Jacka in Dhenkanal, where a large number of the followers of the Gosain assembled with rich presents including valuable clothes, silver utensils, &c. It is said that the Bábáji, or Swámi as he was also addressed, offered these presents to the late Mahárájá of Dhenkanal, and on his declining to accept them they were openly burnt in the fire of the sacred *Dhuni* (fire kept up by religious mendicants). Thus in a few years the Mahimá Gosain succeeded in making many disciples and followers, and on the days of the full moon thousands of men and women from distant parts of the country might have been seen wending their way to the tungís, with bangy loads of ghee, sugar and other valuable presents. It is said that at present the new faith is more popular in Sambalpur than in any other district. It is confined mostly to the ignorant and illiterate people of the lower classes of the Hindu community, who were, it is said, induced to adopt the new religion by hopes of enjoyment if they followed, and threats of perdition if they did not follow, its precepts.

"5. Tho disciples of the Mahimá Swámi inculcate self-denial and resignation to God as the sources of salvation ; they do not aspire after worldly greatness or pleasure ; extreme humility is one of their characteristics. They have no prescribed mode of worship except praise of God and prayer for His mercy. They recognise the Bhágavata, one of the religious books of the Hindus, but interpret it in a different way from the Hindus. They have a Malika, or book of predictions, which treats of the incarnation of Alekh in the shape of Mahimá Swámi to redeem the world from sin and to indicate the way to salvation. Besides this they have got another book containing songs and dialogues interpreting the truth of Alekh. Most of these songs, &c., are said to have been composed by Bhíma Bhoi, a Khond, who is said to have been born blind, and afterwards endowed with sight by the Mahimá Swámi.

"6. The following extract from the report of the Manager of Dhenkanal throws some light on the real sentiments of the Swámi.

"The man who was at first called the Phaláhari Gosain was afterwards designated Mahimá Gosain, and was believed to be an incarnation of the Almighty God. In the year 1874, while I was on tour in the interior of Dhenkanal, the founder of the Mahimá or Alekh religion went with me from place to place and was with me for about a week, and I also saw him on several other occasions, but I never heard from him that he professed to be the Creator of the world as his disciples and followers believed him

to be. From what I heard from him, I concluded that he believed that the Creator of the world was a spiritual Being, omnipresent and omniscient, without any form, whom he called Mahimá and also Alekh Prabhu, and that he alone could communicate with the Alekh Prabhu and get down what he wished. He believed in the existence of the Hindu gods and goddesses, but said that they were under his commands, and that they were bound to obey whatever he wished them to do.'

"7. The followers of the Alekh Swámí are divided into three sects:

"(1) The Kumbhipatías, (2) The Konapatías, and (3) the Ásritas.

"The first two have renounced the world and deem celibacy essential.

The males are called 'Bábás' and the females 'Mátás.' The difference between these two sects is that a Kumbhipatía wears the bark of the kumbhi tree, and a Konapatía pieces of rag. They beg from door to door, have no distinction of caste, and take their food only during the day-time at an open place beside a public road. They eat food cooked by people of any caste except the Rájá, a Bráhmaṇ and a washerman, whom they consider as sinful beings in this world, the Rájá as he is responsible for the sins committed in his state, the Bráhmaṇ as he accepts all sorts of gifts from sinful persons, and the washerman as he washes sinful people's dirty clothes. They are not accustomed to live at any one place for more than a day, or to beg twice from the same house. They wear long matted hair, and do not bathe. They turn their head towards the sun at the time of rising and setting, and prostrate themselves several times to beg shelter and mercy of the Alekh Swámí. The Ásritas do not forsake the world, nor do they deem celibacy essential; they bathe generally early in the morning, and clean their teeth with cowdung; they do not wear long hair, nor do they use kumbhipat or kánapat like their confrères, but use geruá basan or cloth coloured with geru or red earth like the Brahmacháris of the Hindus; they do not observe any Hindu ceremony or festival, neither do they respect the gods of the Hindus. They perform their marriage ceremony in a very simple way by the side of a public road or thoroughfare; the bride puts a garland of flowers round the neck of the bridegroom in token of offering herself to him, and the friends and relatives of both loudly call upon their Alekh Swámí to protect the new pair in their career through life. Polygamy is prohibited among the Ásritas. For any misconduct an offender is made to do penance by drinking a solution of cowdung. The Ásritas consider the other two sects as their gurus or spiritual guides. The Tehsildár of Ungul reports that the new faith of Mahimá has wrought a change for the better on the Páns of that killah, who are notorious for their thieving proclivities. Those who have accepted the new faith regard theft with abhorrence.

"8. In 1875, Mahimá Swámí, who was believed to be immortal, died at Joranda in Dhenkanal, and the tungis, together with the gods and

c hattels they contained, were sold as intestate property. Most of the followers of the new faith, finding that the Swámí was no better than an ordinary mortal, disbelieved what he had inculcated and reverted to Hinduism. Those of his disciples and followers who had left their homes and friends and had been outcasted continued to practise the new faith they had embraced.

"9. At present there are only two places of worship in Dhenkanal, one at Joranda where Mahimá Swámí died and was interred, and another at Mahalpárá where Narsing Dás now lives. The Kumbhipatiás resort to the former and the Kánapatiás to the latter of these places; they are reported not to be on good terms with each other. During the lifetime of Mahimá Swámí, the Kumbhipatiás and Kánapatiás were not regarded as distinct sects. Any person who wished to adopt the new religion first became an *Aerita*, which literally means protected. He was not required to leave his house and friends; afterwards if he wished to forsake the world he was required to eat with every person without distinction of caste and to remain at one of the places of worship called tungís. In this noviciate, he was allowed to wear cloth and was therefore called Kánapatiá. If after trial any of the Kánapatiás was considered fit to be a Kumbhipatiá, Mahimá Swámí favoured him with a kumbhipat bark of the kumbhi tree, and from that time he was prohibited to wear cloth.

"10. The followers of Mahimá Swámí appear to have had no leader since his death; they are scattered throughout the Gurjats of Orissa, in the Chattisgar Division of the Central Provinces, in the regulation districts of Orissa and in Ganjam, the adjoining district of the Madras Presidency. The system has, however, taken more in Sambalpur than elsewhere."

Mr. H. RIVETT-CARNAC exhibited a large number of stone implements, some of well known, and others believed to be of entirely new types, found by Mr. J. Cockburn and himself in the Banda District of the North West Provinces. The celts or stone hatchets of which the collection is chiefly composed were, he said, of a type long familiar to the Society, and many specimens had been figured and described at different times in the Society's Journal by Messrs. H. P. Le Mesurier, Ball, Cockburn and others. The old types resembled in every respect the implements found in Europe and other parts of the world and figured by Evans in his 'Ancient Stone implements,' and by Stephens in 'Flint Chips.' Some celts found in Banda by an officer of the Revenue Survey had come into Mr. Rivett-Carnac's possession some time ago and were presented by him through Mr. Francks, F. R. S., F. S. A., to the British Museum. Mr. Evans, F. R. S., the well known author of 'Ancient Stone Implements,' had seen these specimens and had urged the importance of a careful search being made for more

specimens and for new types. Mr. Cockburn, who had been recently employed in the Banda District, had kindly undertaken to conduct this search, and the careful and complete manner in which he had worked was shewn by what might fairly claim to be the magnificent collection of implements now submitted for the Society's inspection. During his cold weather tour in the Banda District, Mr. Rivett-Carnac had been fortunate enough to find a considerable number of celts *in situ* and a very fine specimen of a stone hammer or ring stone included in the collection. But by far the greater number of these most interesting specimens had been collected by Mr. Cockburn or men employed by him. In addition to the larger implements, Mr. Cockburn had found quantities of flint flakes some of a new and all of the most interesting types. It had been arranged that Mr. Rivett-Carnac should do his best to exhibit and describe the larger and commoner types and that Mr. Cockburn should undertake the description of the more delicate and most interesting specimens of flint flakes. Mr. Cockburn's recent severe accident would, it had been apprehended, have prevented him from attending the meeting, but Mr. Rivett-Carnac was glad to see him present and hoped that he would add a fuller description of the chief specimens of this interesting collection. Specimens of the celts or stone hatchets would be figured in the Society's Journal together with a full description of their size and weight which is of importance for the sake of comparison with those found in other parts of the world. It would hardly be necessary, however, to take up the time of the meeting now with these details. It would be sufficient to point out first that the number of implements of this type was extraordinarily large, there being in all 366 celts or axes or portions of axes. The largest of these being 12.25 in. long and 4.70 in. broad and weighing 8 lb. 3 oz. The smallest 2.50 in. long and 2.15 in. broad and weighing only 3½ oz. Two distinct types of this axe, or whatever the implement really was, were to be noticed, *viz.*, what are classified by Evans (1) as the chipped or rough hewn celts, and (2) polished celts.

The chipped celts are exactly similar to the European specimens, and, as is the case also in Europe, are not so numerous as the latter class, the number in the collection being 100 chipped against 168 polished. It is generally supposed that these chipped celts are but the celts of class 2 in an unfinished stage, and that it was intended eventually to grind and polish them. The edges of some had been ground and may perhaps have been used in this unfinished state.

As regards the polished celts, they also are exactly similar to this class of implement found in Europe. Evans in his work has shewn the manner in which they were hafted and Mr. Cockburn will have something to say on the subject with respect to an old stone carving discovered by him in the Banda District on which a figure is to be seen holding in its hand a

stone implement of this sort inserted into a handle exactly after the manner shewn in the ancient stone implements of Great Britain. In shape they nearly resemble the iron hatchet or little axe with its iron bands discovered in one of the circular tumuli of the Central Provinces and figured and described by Mr. Rivett-Carnac at page 6 of Vol. XLVIII of the Society's Journal. The stone celts were probably in some cases fixed on to the handle with bands of tude or string in the manner of the iron axe. A weapon of this shape was to be seen sculptured in one of the slabs of the Sanchi Topes, (photographed in Fergusson's 'Tree and Serpent Worship') in the hand of what Fergusson had described as a *Dasyu*, a description in which it was, however, believed Dr. Rájendralála Mitra did not agree.

The stone selected for the celts is generally greenstone of various degrees of fineness, in some cases nearly approaching the porphyry. The extreme of this class of rock is a hard black material resembling basalt. Very rarely this black material is found perfectly polished. One or two of the smaller specimens have been recently polished on one side and an edge given to them in order to shew the condition in which it is believed they were used, and it would be seen that a really practical axe or hatchet could be made out of this rough stone.

The collection also contained celts with depressions similar to those found in Europe, hammer or ring-stones, two remarkable stone hammers of an entirely new type, a stone pestle and a stone ploughshare.

The last class comprises some dozen stones of peculiar shape, the exact use of which it was difficult to suggest. They were perhaps intended for pivots for doors. The best specimens of the collection will be selected for description in the Society's Journal.

Mr. John Cockburn read extracts from a paper about to be published in the Society's Journal under the joint authorship of Mr. J. H. Rivett-Carnac, C. I. E., and himself. He explained the forms, uses, and manufacture of stone implements and exhibited a collection of celts, arrow heads, knives, chisels, rasps, planes, and borers. The results of the authors' researches were epitomized under three heads:—

Firstly, the discovery of flint implements of types hitherto only found in Egypt and the islands of the Greek Archipelago.

Secondly, the discovery of fossil bones found associated with stone implements, and in one instance bearing cuts supposed to have been made by such.

Thirdly, the finding of a bit of sculpture representing a man armed with a stone axe in its handle which has been assigned to a period between the 6th and 10th centuries. This date, if accepted by antiquarians, will, the authors are of opinion, be an important land-mark in the unwritten history of ancient India.

The following papers were read—

1. *Note on a Copper-plate Grant from Cuttack.*—By RĀJENDRALĀLA MITRA, LL. D., C. I. E.

In August last Mr. C. H. Tawney sent me, for decipherment, an inscription recorded on three plates of copper, which, he informed me, had been found at Cuttack by J. Winterscale, Esq. As Mr. Winterscale left Calcutta soon after, no information could be obtained as to the exact locale of the discovery of the plates, nor of the circumstances under which it was found.*

The plates measure 8.8 × 5.6 inches each, their thickness being one-tenth of an inch. They are held together by a thick copper ring with a clasp over the point where the two ends of the ring join. There is a misshapen knob on the clasp on which was formerly fixed a seal, which, however, having been badly soldered, has fallen off, and is now lost.

The plates are inscribed longitudinally, the first and the last on the inner side only, and the middle one on both sides. The number of lines inscribed on each side is thirteen, except on the last plate, on which there are thirteen lines and a half. The letters are of the Kuṭīla type, and in an excellent state of preservation, except in a few places on the first and the last plates.

The language of the record is Sanskrit, and the purport, the gift of a village named Yantralenu, in district Sammānī, in the province of Kośala, to one Uttamasāddhārana, a Yajur Vedic Brāhman of Tākara. The donor was ostensibly Mahārājā Mahādevagupta, son of S'ivagupta, but really a petty chief of Kośala, of the name of Kandarpadeva, who, not being himself competent according to the Smṛiti to grant land, which theoretically belongs to the paramount power, invokes his name, and dates it after him on the 13th of the waxing moon in the month Mārgas'irsha (November-December), in the 31st year of his reign.

The name of the ostensible donor has nowhere else been met with, but that of his father occurs in a copper-plate grant noticed by Bābu Rangalāla Bānurji in the Journal for 1877 (XLVI, Pt. I, pp. 149f.). That record was

* Since writing the above I have seen a letter from Mr. Winterscale to the Secretary to the Society in which he gives the following account of his discovery of the plate:

'The copper plate was found by me in 1879 at a place called Chowdwar, about 3 miles from the left bank of the river Mahānadi. About the year 1600 Chowdwar was the stronghold of the Maharattas. I believe a copper plate was found about 1876 near the same place; it was deciphered by Bābu Rangalāla Banurji, a Deputy Collector and Deputy Magistrate. The plate found by me was only about 8 feet underground, and was covered with verdigris, &c. I tried to get the writing deciphered here, and had the plate cleaned by the aid of limes, &c., but otherwise it has not been meddled with in any way: the seal was damaged when I found it.'

found in an old box in the office of the Cuttack Collectorate, where it had lain since 1810, when it was filed as an exhibit in support of a claim for some rent-free land. That the two plates refer to the same person is borne out also by the fact that the same person, Mádhaba, was the engraver of both the records, and the style of the letters is closely alike. If this identification be accepted we get three names of the same dynasty, thus—

- I. Bhava-gupta.
- II. Siva-gupta.
- III. Mahádeva-gupta.

Bábu Rangalála Bánurji assumed that the first two were scions of the later Gupta kings of Magadha, and that Yayáti the actual donor was a lieutenant of Siva-gupta, and I have already accepted these assumptions to be correct.* Without them it is not possible to explain why Yayáti, who was well known as a most powerful king of Orissa and founder of the Kesári line, should, in a solemn religious patent, recite the name of Siva-gupta as the paramount sovereign. We know from the Aphsár inscription that there was a long line of Gupta kings in Behar, and they called themselves the lords of the three Kaliṅgas, and that Bhava-gupta was one of them, while there is nothing to show that there were any Gupta kings to the west or south of Orissa who could claim supremacy in that country. The progress of Yayáti was from the north; he first took Yájapur, then Bhuvanes'vara, and then Puri, and a paramount sovereign for him can be looked for only on the north, and that is Behar. And such being the case, the date of the record must be about the middle of the 6th century. Yayáti's reign extended from A. D. 474 to 526, and he lived in the time of Siva-gupta, and the plates under notice are dated on the 31st of Mahádeva-gupta, the immediate successor of Siva-gupta. Had Yayáti been living then, it is certain that so powerful a chieftain would have been named in the record, to give it weight, and as his name does not occur we must look for the date some time after A. D. 526.

The most serious objection to this identification would be the style of writing, which being Kuṭila, the inference would at once be drawn by some that the record is of the 10th century; but as I have already elsewhere shown that the Kuṭila character had a much wider range than a single century, it is not necessary to notice it here. The history of Orissa from the 7th century upwards is well known, and we have no Yayáti son of Janamejaya in the Orissan history after that date. We must, therefore, accept the Yayáti of the plate to be the founder of the Kesári line, and since his name is associated with the Kuṭila character in an unquestionably

* Vide my *Antiquities of Orissa*, II, p. 53. The district of Kes'ala obviously was situated in Orissa, and did not form, as supposed by Bábu Rangalála Bánurji, a part of Ondh.

authentic record, the arbitrary assumption of the Kuṭila being confined to a single century, and that the 10th, must be set aside.

- १। खलि श्रीमदारामसमावाप्तिनः श्रीमते विजयकटकात् । पर-
- २। मभद्वारकमहाराजधिराजपरमेश्वरश्रीशिवगुप्तदेवपादानुधा-
- ३। तपरममाहेश्वरपरमभद्वारकमहाराजधिराजपरमेश्वरसोम-
- ४। कुलतिलकविकल्किनाधिपतिमहाराजधिराजश्रीमहादेवगुप्तदेवः कु-
- ५। शली कोशलदेये सम्मः नी विश (५) श्री यन्त्रलेनुपामे । ब्राह्मणान् सु-
- ६। प्रकृत + म + यान् यथाकालाश्वसिनः समा + + सश्रिषाष्टविप्र +
- ७। + धिकारिकदाण्डपाणिक चाटभट + नक्षिषिकाधरीध्रजन-
- ८। राणकराजपुत्रराजवत्तभादीन् सर्वान् समाज्ञापयति । विदित-
- ९। मकु भवता यथाग्राभिरयङ्गामः सनिधिः सोपनिधिः सदृशप-
- १०। राधः सर्वबाधाविवर्जितः सत्त्वोपधिककरादानसहितयतुः सि(सी)मापर्यन्तः
- ११। सासमभूकः समर्तौपरः सजलः स्मलसहितः प्रतिनिषिद्धचाटभटाप्रवेशः
- १२। टाकराविनिर्गताय कोशले सर्वबाधाशून्याय भरद्वाजगोत्राय वाई-
- १३। स्यात्प्राज्ञरसप्रवराय वाजमेनशाखाध्यायिने भट्टश्रीमहत्तम-
- १४। साधारणाय । भट्टश्रीखगदेवसुताय । सल्लिधारापुरस्सरमाचन्द्रतारका-
- १५। क्वचित्समकालीयभोगाय । मातापिबोरात्मनश्च पुण्ययोगिष्ठ-
- १६। ये तादृशसनेनाकरीकृत्य प्रतिपादितमित्यवगम्य सम्यक्विनभोगभाग-
- १७। करद्विष्णादिप्रत्यायमपनयद्भिर्भवद्भिः सुखेन प्रतिबल्यमिति । भारि-
- १८। भिद्य भूपतिभिर्दत्तिरियमस्य दीयधर्मगौरवादस्य + + + स्वदत्ति-
- १९। रिवानुपालनीया ॥ तथा चोक्तं धर्मशास्त्रे । बल्लभिवंसुधा भुक्ता रा-
- २०। जभिः समरादिभिः यस्य यस्य यदा भूमिस्त्व तस्य तदा फलं ॥
- २१। माभूदफलशक्ता नः परदत्तिनि (?) पार्थिवाः । स्वदायात् फलमा-
- २२। नन्त्यं परदानानुपालने ॥ षष्टिं वर्षं सहस्राणि स्वर्गमेवादति भूमिदः ।
- २३। आलेप्रा चानुमन्ता च दितयं नरकं व्रजेत् ॥ अग्रेरपत्यः प्रथमः सु-
- २४। ————— सुभाग्यगावः । यः काश्चनश्रीश्च महीश्च दद्यात्
- २५। दत्तास्त्रयस्तेन भवन्ति लोके ॥ आस्त्रोदयनि पितरः प्रवहन्ति पिता-
- २६। महाः । भूमिदाता कुले जातः स नस्माता भविष्यति ॥ भूमिं यः प्रतिगृ-
- २७। ह्णाति यस्य भूमिं प्रयच्छति । उभौ तौ पुण्यकर्माणौ नियतं स्वर्गगामिनौ ॥
- २८। तद्भागानां सहस्राणि वाजपेयशतानि च । गवां कोटिप्रदानेन भूमिदस्य
- २९। न शुध्यति ॥ हरेत हारयेयकु मन्दबुद्धिस्तु मोहतः । सुनक्षो वावकैः पा-
- ३०। शैस्त्रिग्योनिं स गच्छति ॥ सुवर्णमेकं गामेकां भूमेर्यद्भूमिदः । ४-
- ३१। रत्नरकमाप्नोति यावदाभूतसंज्ञवं ॥ स्वदत्तः स्परदत्तां वा यो हरेत वसु-
- ३२। श्वरां । स विष्टायाः क्षमिर्भूत्वा पिबतिः सह पचते ॥ आदित्यो-
- ३३। ववणा विष्णुर्ब्रह्मा सोमा गजाननः । शूलशशिश्च भगवा-
- ३४। नभिनन्दति भूमिदं ॥ सामान्योयं धर्मवैतुष्टपाणां । काले का-
- ३५। ले पालनीयो भवद्भिः । सर्वानेवं भाविनः पार्थिवेन्द्रान् भूये भूये याचते रा-

- ४९ । सभद्रः ॥ इति कमलदलाम्बुविन्दुलोलां त्रियमनुचिन्त्य मनुष्यजीवितम् ।
 ५० । सकलमिदमुदाहृतं बुद्धां न हि पुत्रैः परकि (की) तं यो विलाप्यः ॥ सक-
 ५१ । लभूपालमौलिमालाविलम्बाणिकमयूखव्राताभिर्मण्डिताङ्गिकमल-
 ५२ । युगलः प्रचण्डोद्दण्डमण्डलापखण्डितारामिन्मत्तमन्त्रिभ्यस्त्रि-
 ५३ । रत्नफलप्रसाधितायेपरमशीमण्डलः ॥ यस्तुधारणनाम्नि मन्त्रितिल-
 ५४ । के विन्त्य सत्त्वागामं धैर्योदन्वति तीव्रतेजसि धराराज्यस्य विप्रोत्तम । नाना-
 ५५ । स्थानकविसुरागृतराज्ञादादमन्दं स्फुरन् सन्तोषात् सुखमन्वभूद्विर-
 ५६ । तं दृष्ट्वाश्चूडामणिः ॥ ज्ञायायेवार्थमास्त्रकृतिविमलधिया वेदवेदाङ्गवि-
 ५७ । द्यां शिवां कल्पं जिह्वास्तुः प्रकटसुरगुहः प्राग्भूमिष्ठधाव्या । साक्षा साधार-
 ५८ । येन द्विजवरविधिना मन्त्रिणा यस्य राज्यं नित्याद्यं सोयस्यदक्षिजग-
 ५९ । ति विदिता वर्मकन्दर्पदेवः ॥ परमसाधेश्वरपरमभट्टारक-
 ६० । महाराजाधिराजपरमेश्वरसोमकुलतिलकचिकित्साधि-
 ६१ । पति श्रीमहादेवगुप्तेवपादपद्मप्रवर्द्धमानविजयराज्ये एकचिंशत्तमे
 ६२ । संवत्सरे । मार्गशुद्धि तिथौ चयोदश्यां स्यादङ्केनापि संवत् २१ मार्ग-
 ६३ । शुद्धि १२ । लिखितमिदं विप्लीताद्यमासनं महाभाव्यविप्लीराजकत्रीम-
 ६४ । ज्जदप्रशिष्टकायस्त्रीमा + किल प्रियङ्करादित्यसुतेनेति ॥ प्रणीतं कोश-
 ६५ । केन्द्रेण प्रतिबोध सहजम् । आदत्तपुण्डरीकाक्षः मासनं ताद्यनिर्मितं ॥
 ६६ । उत् कि (की) निर् (र्षि) तं साधवेन वावप्रति + + ।

TRANSLATION.

May it be auspicious! From the victorious camp (or from the victorious town of Kāṭaka) of his majesty sojourning in his garden.

The great worshipper of Mahéśvara, his august majesty, the superior of great kings, the great lord, the ornament of the race of the moon, the sovereign of the three Kāliṅgas, the superior of great kings, the auspicious Mahādeva-gupta Deva; son and successor of his august majesty, the superior of great kings, the great lord, the auspicious Śivagupta Deva, prospers. In the village of Yantralenu, in the district of Sammāni, in the province of Kōśala, he thus proclaims to the Brāhman—? who perform their worship —? —? ministers of justice, soldiers—? mountaineers, Rānakas, princes, courtiers and all others. Be it known unto you, that this village with its mines, deposits, ten judicial powers, and freedom from all incumbrances, along with its rights, privileges, rents, and dues within its four bounds, together with all mango and mahūā trees and hollows, wastes, waters and dry lands, with exemption from the entrance of soldiers, has been given by me to Bhaṭṭa Uttamasādbārana, an inhabitant of Tākara, in Kōśala, of the Gotra of Bharadvāja and the Pravara of Vārhaspatyāṅgīrasa, a reader of the Vājasaneyī śākhā (of the White Yajur Veda), and son of Bhaṭṭa Khagadeva. This is confirmed by being recorded in a copper plate

patent, preceded by sanctification with water,* and intended for enjoyment during the duration of the moon, the stars, the sun, and the earth, and for the enhancement of the virtue and fame of my parents and my own self. Knowing all this you should render all dues, usufructs, shares, rents, gold, &c., and dwell in peace. Taking this gift of mine as that of their own, out of respect for righteousness, future kings should uphold this grant. Thus has it been ordained in the Dharma-śāstra—

“Many kings, like Sagara and others, have enjoyed the earth; to him accrued the fruit to whom belonged the earth for the time being.

“Let there be no suspicion, kings, that others' gifts are fruitless, for the preservation of others' gifts is more fruitful than gifts made by one's ownself.

“The donor of land enjoys in heaven for sixty thousand years, while the two, the abrogator and the destroyer of it, repair to hell.

“The first is the son of fire. He who bestows gold, wealth and land to him in this world—†

“The fathers are elated, the grandfathers are filled with pride, when a donor of land is born in their family, one who will be to their redemption.

“Both, he who accepts land and he who bestows it, are performers of virtuous deeds, and are destined to go to heaven.

“Not even the excavation of a thousand tanks, nor even the performance of the Vājapeya sacrifice a thousand times over, nor even the gift of ten million head of cattle, can redeem the resumer of a land-grant.

“Whoever, from wicked motives or delusion, resumes, or causes to be resumed, a land-grant, is bound by the fetters of Varuṇa, and is born a brute.

“The robber of a suvarṇa,‡ or of land not exceeding even half a finger's breadth in area, dwells in hell until the next entire destruction of the earth.

“Whoever resumes land, whether given by himself or by another, becoming a maggot, rots in ordure along with his ancestors.

“Aditya, Varuṇa, Viṣṇu, Brahmā, Soma, the elaphocephalic god, and the wielder of the trident bepraise the donor of land.

“This is the common bridge of virtue for kings; it should be at all times protected by you; this is the prayer which Rāma, the auspicious, repeatedly addresses to all future kings.

“Knowing prosperity and human life and all and every thing that is here done to be as unsteady as a drop of water on a lotus leaf, no good man should efface the virtuous acts of others.”

* Lit. by the pouring of water.

† The distich is incomplete, and I cannot fully make out its purport.

‡ A sovereign, a gold coin.

He, the crest jewel of kings, whose two lotus feet are irradiated by the glory of the rubies sparkling on the diadems of kings; who, the fierce valiant one, has bestrewed battle-fields with pearls reft from the heads of herds of inimical elephants; who, reposing the revenue of his kingdom in the hands of the chief minister named Sádharma, a noble Bráhmaṇ, patient as the ocean, and most rigorous, enjoyed the pleasures of contentment by tasting the nectar of joy by travelling in various places; who without knowing the Vedas, the Vedāṅgas, the S'ikshás, and the Kalpas, became, by his clear understanding and knowledge of political economy and law, like the chief priest of the gods located on earth; whose kingdom is always thriving through the conciliatory action towards the public and the observance of Bráhmie rules on the part of his minister—even he is the wealthy Varma, Kandarpadeva, renowned in the three spheres.

In the year thirty-one of the reign of the thriving and victorious lotus feet of the great worshipper of Mahéśvara, of his noble majesty, the superior of great kings, the lord, the ornament of the lunar race, the sovereign of the three Kaliṅgas, the auspicious Mahádevagupta Deva, on the 13th day of the waxing moon of Márga (November-December),—in clear figures Samvat 31, Márga Sudi 13—was composed the text of these three copper tablets by the chief minister of war and peace, Malladatta, a Káyastha of pure lineage, the son of Priyaṅkaráditya. It was executed by the chief of Kośala with the knowledge of the great chief. This copper-made patent was witnessed by Puṇḍarikáksha,* and engraved by Mádhava.

2. *Memoir of the author of the Tabaqat-i-Násiri.*—By MAJOR G. H. RAVERTY.

This paper is an extract from the preface to the author's translation of the *Tabaqat-i-Násiri*, and will be published in the Journal, Part I, for 1882.

3. *On some new and rare Rhopalocerous Lepidoptera from the Indian Region.*—By MAJOR G. F. L. MARSHALL, R. E.

This paper will be published in the Journal, Part II, for 1882.

4. *On a collection of Japanese Clausiliae made by Brigade Surgeon R. Hungerford in 1881.*—By O. F. VON MOLLENDORFF, Ph. D., Vice-Consul for Germany, Hongkong. Communicated by J. WOOD-MASON, Natural History Secretary.

This paper will be published in the Journal, Part II, for 1882.

* The word *Pundarikáksha* stands unconnected, and I have put in the words "witnessed," not knowing how otherwise to deal with it.

LIBRARY.

The following additions have been made to the Library since the Meeting held in December last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

- Baltimore. American Chemical Journal,—Vol. III. No. 4.
 ———. American Journal of Philology,—Vol. II, No. 7.
 Berlin. Journal für die reine und angewandte Mathematik,—Vol. XCI, Parts 1-4.
 ———. K. preussische Akademie der Wissenschaften,—Monatsbericht, July to October 1881.
 Bombay. The Indian Antiquary,—Vol. XI, Part 128, January 1881.
 Bordeaux. Société de Géographie Commerciale,—Bulletin, Nos. 22 and 23.
 Calcutta. Indian Meteorological Memoirs,—Vol. I, Part 6.
 ———. Original Meteorological Observations,—November and December 1880, January and February 1881.
 Dresden. Naturwissenschaftliche Gesellschaft Isis,—Sitzungsberichte und Abhandlungen, January to June 1881.
 Leipzig. *Εστρεπος*,—Vol. I, Nos. 1-10.
 London. Academy,—Nos. 498-501.
 ———. Athenæum,—Nos. 2821-2824.
 ———. Anthropological Institute of Great Britain and Ireland,—Journal, Vol. X, No. 4, May 1881.
 ———. Nature,—Vol. XXV, Nos. 630-632.
 ———. Royal Asiatic Society of Great Britain and Ireland,—Journal, Vol. XIII, Part 4, October 1881.
 ———. Royal Microscopical Society,—Journal, Vol. I, Part 5, October 1881.
 Stewart, Charles.—On a supposed new Boring Annelid. Summary of current researches relating to Zoology and Botany.
 ———. Royal Geographical Society,—Proceedings, Vol. III, No. 10, October 1881.
 ———. Zoological Society of London,—Proceedings, Part 3, 1881.
 Munich. K. b. Akademie der Wissenschaften, mathematisch-physikalische Classe,—Sitzungsbericht, Parts 2 and 3, 1881.
 ———. ———. Abhandlungen,—Vol. XIV, Part 1.
 ———. ———. philosophisch-philologische Classe,—Sitzungsbericht, Supplement, Part 6, 1880; Vol. I, Parts 1-2, 1881; and Vol. II, Part 1, 1881.
 ———. ———. Abhandlungen,—Vol. XVI, Part 1.

- Munich. Repertorium für Experimental-Physik,—Vol. XVIII, Part 1.
 Paris. Journal Asiatique,—Vol. XVIII, No. 1, July 1881.
 ——. Société de Géographie—Bulletin, April 1881.
 ——. Société Zoologique de France—Bulletin, Parts 3-4, April to July 1881.
 Thomas, Ph.—Recherches sur les Bovidés fossiles de l'Algérie. *Gasco, Dr. F.*—
 Les Amours des Axolotls.
 Philadelphia. Academy of Natural Sciences,—Journal, Vol. VIII, (Second Series), Part 4.
 ——. ——. Proceedings, Parts I-III, January to December 1880.
 ——. American Philosophical Society,—Proceedings, Vol. XIX, Nos. 107-108.
 ——. ——. Transactions,—Vol. XV. Part III.
 Rome. Società degli Spettroscopisti Italiani,—Memorie, Vol. X, No. 10, October 1881.
 Roorkee. Professional Papers on Indian Engineering,—Vol. X, No. 42.
 Simla. United Service Institution of India,—Journal, Vol. X, No. 49.
 St. Petersburg. L'Académie Impériale des Sciences,—Mémoires, Vol. XXVIII, Nos. 3-7.
 Washington. Geological and Geographical Survey of the Territories, Bulletin,—Vol. VI, No. 2.

BOOKS AND PAMPHLETS,

presented by the Authors.

- GARDNER, D. M. The Hindu and Roman Law of Adoption. 8vo. London, 1881. Pam.
 GODWIN-AUSTEN, LT.-COL. H. H. On the Land Molluscan Genus *Durgella*, W. T. Blanford; with notes on its anatomy and description of a new species. 8vo. London. Pam.
 ——. Description of the Animal of *Durgella christiana*, a species of landshell from the Andaman Islands. 8vo. London, 1881. Pam.
 MALLERY, COL. GARRICK. Address before the American Association for the Advancement of Science at Cincinnati, Ohio. August 1881. 8vo. Salem, 1881.
 Report on the Census of the Town and Suburbs of Calcutta, taken on 17th February 1881. Compiled by H. Beverley. Fep. Calcutta, 1881.

MISCELLANEOUS PRESENTATIONS.

- Archæological Survey of India, Reports, Vol. XII. 8vo. Calcutta, 1879.
 Annual Report on Inland Emigration for the year 1880-81. Fep. Calcutta, 1881.

Report of the Internal Trade of Bengal for 1880-81. Fcp. Calcutta, 1881.
BENGAL GOVERNMENT.

Anniversary Memoirs of the Boston Society of Natural History, 1830-80.
4to. Boston, 1880.

BOSTON SOCIETY OF NATURAL HISTORY.

MUELLER, F. MAX. *Anecdota Oxoniensia*. Texts, Documents, and Extracts,
chiefly from MSS. in the Bodleian and other Oxford Libraries. Arjan
Series. Vol. I, Pt. I:—Buddhist Texts from Japan. 4to. Oxford, 1881.

CLARENDON PRESS, OXFORD.

Annual Report of the Commissioner of Agriculture for 1878 and 1879.
8vo. Washington, 1879-80.

DEPARTMENT OF AGRICULTURE, U. S., AMERICA.

RAVERTY, MAJOR H. G. Notes on Afghanistan and part of Biluchistan,
Section III. Fcp. London, 1881.

FOREIGN DEPARTMENT.

BALL, V. A Manual of the Geology of India. Vol. III (Economic Geo-
logy). 8vo. Calcutta, 1881.

GEOLOGICAL SURVEY OF INDIA.

Achæological Survey of India. Reports, Vol. XII. 8vo. Calcutta, 1879.
The Indian Antiquary, Vol. XI, Part 128, January 1882.

HOME DEPARTMENT.

Brief Sketch of the Meteorology of the Bombay Presidency in 1880. 8vo.
Bombay, 1881.

METEOROLOGICAL REPORTER FOR WESTERN INDIA.

CHRIST, WILHELM VON. *Gedächtnisrede auf Leonhard von Spengel*. 4to.
München, 1881.

HEIOEL, KARL THEODOR. *Die Wittelsbacher in Schweden*. 4to. München
1881.

MUNICH ACADEMY.

Report on the Administration of the N. W. P. and Oudh, ending 31st
March 1881. 8vo. Allahabad, 1881.

GOVERNMENT, N. W. PROVINCES.

TUPPER, C. L. Punjab Customary Law. Vols. I—III, 8vo. Calcutta,
1881.

Records of the Geological Survey of India, Vol. XIV, Part 4, 1881.

REVENUE AND AGRICULTURAL DEPARTMENT.

A Memorial of Joseph Henry. 8vo. Washington, 1880.

SMITHSONIAN INSTITUTE.

BAIRD, CAPT. A. W., AND ROBERTS, E. Tide-Tables for the Indian Ports
for 1882. 8vo. London.

———. Tide-Tables for the River Hooghly, Diamond Harbour, Fort
Gloster and Kidderpore (Calcutta) for 1882. 8vo. London.

SUPT., TIDAL AND LEVELING OPERATIONS, SURVEY OF INDIA.

PERIODICALS PURCHASED.

- Berlin. Deutsche Litteraturzeitung,—Vol. II, Nos. 1-41.
- Calcutta. Indian Medical Gazette,—Vol. XVI, No. 12, December 1881 ;
and Vol. XVII, No. 1, January 1882.
- Edinburgh. Edinburgh Review,—No. 316, July to October 1881.
- Geneva. Archives des Sciences Physiques et Naturelles,—Vol. VI, No. 11.
- Giessen. Jahresbericht über die Fortschritte der Chemie,—Part 2, 1880.
- Göttingen. Gelehrte Anzeigen,—Nos. 45-48.
———. Nachrichten, No. 14.
- Leipzig. Annalen der Physik und Chemie,—Vol. XIV, No. 3.
———. Beiblätter,—Vol. V, No. 11.
———. Botanisches Centralblatt,—Vol. VII, Nos. 11-13 ; and Vol. VIII,
No. 1.
———. Literarisches Centralblatt,—Nos. 39-41, September to October
1881.
- London. Annals and Magazine of Natural History,—Vol. VIII, No. 46,
October 1881.
Carter, H. J.—Contributions to our knowledge of the *Spongida*. Order I.
Carnosa.—Miers, Edward J.—On a collection of *Crustacea* made by Baron
Hermann Maltzan at Goree Island, Senegambia.
———. Chemical News,—Vol. XLIV, Nos. 1147-1150.
———. Entomologist,—Vol. XIV, No. 221, October 1881.
———. Entomologist's Monthly Magazine,—Vol. XVIII, No. 209, Octo-
ber 1881.
Osten-Saeken, O. E.—A brief notice of Carl Ludwig Doleschall, the Dipterolo-
gist.
———. Journal of Botany,—Vol. X, No. 226, October 1881.
———. Journal of Conchology,—Vol. III, No. 7, July 1881.
———. Journal of Science,—Vol. III, No. 94, October 1881.
———. London, Edinburgh, and Dublin Philosophical Magazine,—Vol.
XII, No. 75, October 1881.
———. Messenger of Mathematics,—Vol. XI, No. 5.
———. Mind,—No. 24, October 1881.
———. Nineteenth Century,—Vol. X, No. 56, October 1881.
———. Numismatic Chronicle,—Vol. I, Part 2, 1881.
———. Publishers' Circular,—Vol. XLIV, No. 1060.
———. Quarterly Journal of Microscopical Science,—Vol. XXI, No. 84,
October 1881.
Klein, E.—The Organ of Jacobson in the Rabbit. Bower, F. O.—On the fur-
ther development of *Wohlfahrtia mirabilis*. Mitsukuri, K.—On the Struc-
ture and Significance of some aberrant forms of Lamellibranchiate Gills.
Lankester, E. Ray.—Limulus an Arachnid.

- London. Society of Arts,—Journal, Vol. XXX, Nos. 1513-1516.
New Haven. American Journal of Science,—Vol. XXII, No. 129.
Paris. Annales de Chimie et de Physique,—Vol. XXIV, November 1881.
———. Comptes Rendus,—Vol. XCIII, Nos. 19-22.
———. Journal des Savants, November 1881.
———. Revue Critique,—Vol. XII, Nos. 46-49.
———. Revue des deux Mondes,—Vol. XLVIII, No. 2.
———. Revue Scientifique,—Vol. XXVIII, Nos. 21-24.

BOOKS PURCHASED.

- BARTH, A. The Religions of India. 8vo. London, 1882.
BELLEW, SURGEON-MAJOR H. W. The Races of Afghanistan, being a brief account of the principal nations inhabiting that country. 8vo. Calcutta, 1880.
DARWIN, CHARLES. The Formation of Vegetable Mould. 12mo. London, 1881.
FOULKES, REV. THOS. The Hindu Law of Inheritance, according to the Sarasvati-Vilása. 8vo. London, 1881.
Gleanings in Science. Vols. I-III. 8vo. Calcutta, 1829-31.
HARVEY, WILLIAM. The works of William Harvey, M. D. Translated from the Latin with a Life of the Author by Robert Willis, M. D. 8vo. London, 1847.
JACOB, MAJOR G. A. A Manual of Hindu Pantheism. The Vedántasára. 8vo. London, 1881.
ROSCOE, H. E., AND SCHORLEMMER, C. A Treatise on Chemistry. Vol. III:—Organic Chemistry, Part I. 8vo. London, 1881.
STACK, CAPT. GEORGE. A Dictionary, English and Sindhi. 8vo. Bombay, 1879.
STERNDALE, ROBERT A. Denizens of the Jungles: a series of sketches in pen and pencil. Obl. Folio. Calcutta, 1881.
-

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR FEBRUARY 1882.

The Annual Meeting of the Asiatic Society of Bengal was held on Wednesday, the 18th February 1882, at 9 P. M.

DR. RAJENDRALALA MITRA, C. I. E., Vice-President, in the Chair.

According to the Bye-Laws of the Society the Chairman ordered the voting papers to be distributed for the election of Officers and Members of Council for 1882; and appointed

DR. D. WALDIE and MR. J. ELIOT, Scrutineers.

The CHAIRMAN then called upon the Secretary to read the Annual Report.

ANNUAL REPORT FOR 1881.

The Council have much pleasure in submitting the following Report of the state and progress of the Society during the past year.

During the year 1881, 24 gentlemen were elected members of the Society. The elections of two of these and of three of those elected in 1880 were cancelled. Thirteen members withdrew from the Society, seven died, and the names of 5 were removed from the Member list in accordance with the provisions of Rule 40. The total number of Members therefore at the close of 1881 was 350 against 356* of the previous year. Of these 110 are Resident, 168 Non-Resident, 17 Foreign, 14 Life, and 41 Non-Subscribing Members.

* The total number of Members at the close of 1880 was 356, and not 355, as stated in the last Annual Report, the name of one Member being by an oversight omitted in the last Member List.

The following table shows the fluctuations in the number of Ordinary Members for the past 6 years.

| YEAR. | PAYING. | | | | NON-PAYING. | | | GRAND TOTAL. |
|-------|-----------|---------------|----------|--------|-------------|---------|--------|--------------|
| | Resident. | Non-resident. | Foreign. | Total. | Life. | Absent. | Total. | |
| 1876 | 119 | 175 | ... | 294 | 5 | 48 | 53 | 347 |
| 1877 | 113 | 165 | 14 | 290 | 9 | 46 | 55 | 345 |
| 1878 | 117 | 153 | 15 | 285 | 13 | 29 | 42 | 327 |
| 1879 | 111 | 154 | 16 | 281 | 12 | 36 | 48 | 329 |
| 1880 | 112 | 185 | 15 | 312 | 14 | 30 | 44 | 356 |
| 1881 | 110 | 168 | 17 | 295 | 14 | 41 | 55 | 350 |

To fill four of the vacancies in the Honorary Member List caused by the deaths of Sir John Phillippart, Count de Noe, Professor Isaac Lea, Colonel W. Munro and Sir J. W. Colvile, the following Gentlemen were, on the recommendation of the Council, elected Honorary Members:—Professor Hermann L. F. Helmholtz, Dr. Rudolph von Roth, Sir William Thomson and Professor William Wright. The remaining vacancy has been left unfilled for the present.

The Society has lost the following Ordinary Members by death during the year 1881:—Major-General Edward Tuite Dalton, the author of the "Ethnology of Bengal," and of several papers on the Geography and Ethnology of Assam published in the Society's Journal and Proceedings, Captain W. H. Johnstone, Kumar Kantichandra Singh, Mr. L. Mandelli, Mr. C. Magrath and Mr. W. M. Souttar.

Indian Museum.

Sir Ashley Eden, President, (from the date of his election in March), Mr. O. H. Tawney, Mr. H. Boverley and Dr. A. F. R. Hoernle have acted as Trustees on behalf of the Society. On Mr. A. Pedler leaving India in May, Mr. J. Eliot was elected Trustee in his place.

The following presentations have been made to the Museum, through the Society, during the year:—(1) Weapons from the Andamans and the Nicobars presented by Mr. F. A. de Roepstorff; (2) Spindle whorls, fragments of clay figures, pieces of pottery and other antiquities found in excavations carried on at Jowhri Dih, presented by Mr. J. E. P. Lincke; (3) Hollow earthenware structures probably used as ornaments on a balustrade, and a brick from Moti Bazar, Bulandshahr, presented by Mr. F. S. Growse.

Finance.

The accounts (which will be found in the Appendix) have been kept in the mode introduced during the year 1880, and the Summaries are issued in the same form as was adopted last year.

The method has worked very satisfactorily during the year, and has, as was anticipated, considerably reduced the labour of their preparation and added to their clearness and precision.

An estimate of income and expenditure was prepared last year and laid before the Society at its Annual Meeting. According to this it was anticipated that the income would amount to Rs. 16,300 and the expenditure to Rs. 15,816 and that there would probably be a small balance on the favourable side of the accounts. This has not been realized. Owing largely to the exertions of the officers of the Society, on the one hand a much larger amount of the subscriptions for this year and the outstanding debts was collected than was estimated, and on the other a searching examination of the books showed that a larger amount was due from Members than was indicated by the accounts before this revision.

The income of the Society was Rs. 19,588-10-2 or Rs. 2,688 in excess of the anticipated amount.

The expenditure of the Society has, the Council regrets to state, been not only considerably in excess of the estimate but also of the income. The total for the year was Rs. 21,464-11-7 or Rs. 1,876-1-5 in excess of income.

This large expenditure is mainly due to increase in the important item of Publications. The estimate passed by the Council was Rs. 6,810, whilst the actual expenditure was Rs. 9,195-14-7.

As the income of the Society barely suffices to pay the expenses as shewn by estimate, it is, we consider, essential that measures should be taken to secure due control over expenditure under this head, so that the Honorary Secretaries in charge of publications may limit their expenditure to the amount allowed for the year.

The only other item in which the increase is very marked is that of postage. This is due to the fact that the Society's Journals and Periodicals are now forwarded by post in all cases to Members, whether in India or in Europe.

With the exception of this point the financial condition of the Society is on the whole satisfactory. The Cashier recently engaged under arrangements made by Mr. Douglas has taken much trouble and has performed his duties satisfactorily.

The following is the estimate of income and expenditure for the year 1882.

RECEIPTS.

| | | | | |
|------------------------|-----|-----|-----|------------|
| Subscriptions | ... | ... | ... | Rs. 8,250 |
| Sale of Periodicals | ... | ... | ... | 1,000 |
| Admission Fees | ... | ... | ... | 1,000 |
| Interest on Investment | ... | ... | ... | 6,650 |
| | | | | <hr/> |
| | | | | Rs. 16,900 |

EXPENDITURE.

| | | | | |
|---------------------------|-----|-----|-----|------------|
| Salaries | ... | ... | ... | Rs. 4,570 |
| Commission | ... | ... | ... | 850 |
| Pensions | ... | ... | ... | 228 |
| Stationery | ... | ... | ... | 250 |
| Lighting | ... | ... | ... | 80 |
| Building | ... | ... | ... | 600 |
| Taxes | ... | ... | ... | 720 |
| Postage | ... | ... | ... | 1,000 |
| Freight | ... | ... | ... | 50 |
| Meetings | ... | ... | ... | 100 |
| Contingencies | ... | ... | ... | 400 |
| Books | ... | ... | ... | 1,500 |
| Local Periodicals | ... | ... | ... | 60 |
| Binding | ... | ... | ... | 500 |
| Coins | ... | ... | ... | 50 |
| Printing and Publications | ... | ... | ... | 8,850 |
| Plates | ... | ... | ... | 2,450 |
| | | | | <hr/> |
| | | | | Rs. 16,758 |

London Agency.

Messrs. Trübner and Co.'s accounts showed a balance at the end of 1880 of £49-9-0½ in their favour. The sale proceeds of the Society's publications sold by Messrs. Trübner and Co. during that year amounted to £79-19-2, and of the Bibliotheca Indica to £67-11-0. Fifteen invoices of books purchased and of publications of different Scientific Societies sent in exchange were received from Messrs. Trübner and Co. during 1881. The value of the books purchased amounted to £181-5-6: 524 copies of the Journal, 961 copies of the Proceedings and 822 copies of parts of the Bibliotheca Indica were sent to Messrs. Trübner and Co. for sale.

The copies of the Journal, Proceedings and Bibliotheca Indica for 1881, intended for Societies and Members in Europe, were sent by post instead of through Messrs. Trübner and Co. as has hitherto been done.

Library.

The additions to the Library during the year amount in all to 1,845 volumes or parts of volumes, 1,092 of which were presentations or were received in exchange for the Society's publications, and 753 were purchases.

The Catalogue of the Library is now passing through the press under the superintendence of Mr. H. B. Medlicott. The Council regret that the work is progressing very slowly owing to the inaccuracy and want of arrangement in the manuscript Catalogue. In consequence of this, the Catalogue had to be almost entirely re-arranged before it could be sent to press; and it is necessary for the Assistant Secretary in revising the proofs to check the correctness of the titles of the books by comparing them with the books themselves. The Council, however, hope that the Catalogue will be published and distributed to Members in the course of the ensuing year.

The work of cataloguing the Sanskrit books and manuscripts, for which a special Pandit was engaged, is nearly completed, and satisfactory progress has been made by the Munshi engaged to catalogue the Persian and Arabic books and manuscripts. For the purpose of preserving the manuscripts from the ravages of insects, it was decided on the proposal of Dr. Mitra to treat certain of them with a preparation of arsenic, and a duftry was temporarily engaged for that purpose.

Publications.

During the past year the following Nos. of the Journal and Proceedings were published: Journal Part I, Nos. 1—4 of 1881, containing 251 pages of letterpress and 20 plates; Extra No. to the Journal, Part I for 1880 containing 171 pages; Journal Part II, No. 4 of 1880, and Nos. 1—4 of 1881, containing 354 pages and 17 plates.

Proceedings, No. 10, of 1880 and Nos. 1—8 of 1881, containing 176 pages and 3 plates.

Building.

The sum spent on repairs during 1881 was very trifling, amounting to Rs. 461-8-9. Of this amount Rs. 350 was paid for the repairs of the road in the compound.

Coin Cabinet.

Altogether 95 coins were acquired during the past year: of these 62 were purchased; the remainder, 33, are presentations.

Among the purchases there are 4 gold (see Proceedings 1880, p. 40),

32 silver (including the 14 early Muhammadan coins found near Gaubati, *ibid*, p. 52), and 26 copper coins.

Among the presentations are : 2 Jaunpuri silver coins from Rájá Udayapratápa Sinha of Bhinga, Oudh (*ibid*, p. 41) ; 2 old Hindi and one Khalifa silver and one unknown copper coin from Mr. Holgnette (*ibid*, pp. 41, 42) ; 14 copper coins from the Political Agent, Bundelkhand ; one copper coin from the Magistrate of Fatehpur ; 12 copper coins from the Political Agent, Charkbaree.

Secretary's Office.

Dr. A. F. R. Hoernle has continued to act as Philological Secretary throughout the year.

During Mr. Wood-Mason's absence from Calcutta, from January to September, Mr. V. Ball officiated as Natural History Secretary, and on the resignation of Mr. J. Douglas in March he also took up the duties of Treasurer.

On Mr. Ball's leaving India in September, Mr. J. Wood-Mason resumed the Natural History Secretaryship and Mr. J. Eliot was appointed Treasurer. Mr. H. F. Blanford and Mr. A. Pedler officiated as Treasurer on two occasions when Mr. Eliot was absent from Calcutta.

Mr. A. Pedler resigned the General Secretaryship in April and Dr. H. W. M'Cann was appointed in his place. During Dr. M'Cann's absence from the middle of May to middle of June, Mr. Eliot officiated as General Secretary ; and during Dr. M'Cann's absence in November, Mr. Wood-Mason officiated as Secretary.

Mr. W. A. Bion and Mr. E. S. Andrews have continued to hold the posts of Assistant Secretary and Assistant Librarian respectively.

Babu Ram Jivan Mukerji, tho Cashier, was dismissed in January, and Babu Nrityn Gopal Basu was appointed Cashier. The services of the Babu employed temporarily to index the Society's old Records were dispensed with at the end of January, as it was found advisable to do so on financial grounds. A copyist was appointed in May on Rs. 15 per mensem.

Bibliotheca Indica.

Twenty fasciculi were published during the year ; sixteen in the Sanskrit and four in the Arabic-Persian Series. They belong to thirteen different works, of which three belong to the Arabic-Persian and ten to the Sanskrit Series. Among them two in the Sanskrit and one in the Arabic-Persian Series have been completed, and four, all in the Sanskrit Series, have been commenced. The former are the *Tuittiríya Samhitá*, and the *Turíkh-ul-Khulfa* ; the latter are the *Pátanjala Yoga Súra*, the *Apastamba Srauta Súra*, and the English Translation of the *Lalita-Vistara*. One work, the *Vishnu Smṛiti*, has been both commenced and completed during the year.

Among these publications there are four English Translations ; viz., of the *Tarikh-ul Khulfa* in the Arabic-Persian Series, and of the *Kathá Sarit Ságará*, the *Lalita Vistara* and the *Pátanjala Yoga Sútra*, in the Sanskrit Series. There are also ten text editions, two in the Arabic-Persian and eight in the Sanskrit Series. Of the *Pátanjala Yoga Sútra* both text and translation are being published *pari passu*.

A. Arabic-Persian Series.

1. Of the *IṣṬĀH* or Biographical Dictionary of persons that knew Muhammad, by Ibn Hajar, one fasciculus has been published by Maulvi 'Abdul Hai, Head Professor of the Calcutta Madrasah.

2. Major H. S. Jarrett has published the sixth fasciculus of his annotated English translation of the *TARĪKH UL-KHULFA*, or the History of the Caliphs by Jalāl-ud-dīn as Suyūṭī. This concludes the work.

3. Of the *AKBARNĀMAH*, edited by Maulvi 'Abdur Raḥīm, two fasciuli have been published. These commence the third Volume of that work.

B. Sanskrit Series.

4. Pandit Mahesachandra Nyayaratna, Principal of the Sanskrit College, has brought out the thirty-second fasciculus of his edition of the *TAITTIRIYA SAMHITĀ*, containing the earliest recensions of the mantras of the Black Yajur Veda together with the commentary of Mādhava Āchārya. This completes the fourth volume of that work.

5. The same editor has issued one more fasciculus of the text of the *MĪMĀMSĀ DARŚANA*, a critical commentary on the ritual of the Veda, accompanied by the commentary of Savara Svāmin. This is the fifth of the Society's series of the six Darśanas. The texts of four have been already published ; and the sixth is the *Yoga Sútra* of Patanjali, mentioned below (No. 12).

6. Dr. Rājendralāla Mitra has advanced his edition of the text of the *VĀYU PURĀṆA* by one fasciculus, the first of the second volume. This is the second of the Society's Series of the Purāṇas, a sort of Cyclopædias of Sanskrit Literature. The first is the *Agni Purāṇa*, a complete edition of which has already been published by the same learned editor.

7. Mr. C. H. Tawney, M. A., Principal of the Presidency College, has published three fasciuli of the second volume of his English translation with notes of the *KATHĀ SARIT SĀGARĀ* or the Ocean of Streams of Story. Four more fasciuli will probably complete this work, which is the celebrated repository of Indian legends composed from older sources by Somadeva of Kashmīr toward the close of the eleventh century. The stories are illustrated by notes which refer to similar legends current in other collections of folklore.

8. Pandit Satyavrata Sāmaśramī has brought out three fasciculi of his edition of the *NIRUKTA*, the well known glossarial explanation of obscure Vedic terms, together with extracts from various commentaries.

9. One fasciculus has been published of Hemadri's *CHATURVARGACHINTAMANI* by the joint-editors, Pandits Yogeśvara Smṛitiratna and Kāmākhyānātha Tarkaratna. This commences the fifth part of the work, the *Parīśeṣha Khaṇḍa*; it is, however, the third volume of the Society's series, manuscripts for two parts being wanting.

Among the works which were announced in the Annual Report of last year to be in course of preparation (see Proceedings 1880, p. 29), are the following, portions of which have been published:—

10. The *VIṢṢṢU SMṚITI*, by Professor Jolly of Würzburg, containing the text with extracts from various commentaries. The whole work has been already completed in two fasciculi.

11. The *ĀPASTAMBA ŚRAUTA SŪTRA*, a very rare and important work connected with the Black Yajur Veda, edited by Professor R. Garbe of Königsberg, together with the Commentary of Rudradatta. Two fasciculi of this work have been issued.

12. The *YOGA SŪTRA* of Patanjali, of which the first fasciculus has been published by Dr. Rājendralāla Mitra. The text is accompanied by the commentary of Bhoja Rājā and an English translation of both the text and commentary; also by an English commentary compiled by the editor himself, including short extracts from the commentaries of Vyāsa Vijñāna Bhikṣhu and Vachaspati Miśra.

13. The same editor has issued the first fasciculus of his English translation of the *LALITA-VISTARA*, one of the most ancient and important works on the earlier portion of the life of Buddha.

Continuations of the following works are being prepared:—

1. *ṬABAQĀT-I-NĀSIRĪ* by Abū 'Umar-i-Uḡmān, translated by Major H. G. Raverty. One more fasciculus will complete this valuable work.

2. The *PRĀKRITA LAKṢHAṆA* by Chaṇḍa, a Grammar of the Ancient Prakrit, edited by Dr. A. F. Rudolf Hoernle. The second fasciculus, containing translation and notes, is nearly ready.

3. The *PRITHIRĀJ RĀSAU*, by Chand Bardāī; text and translation, by Dr. A. F. Rudolf Hoernle.

4. The *KATANTRA*, with the Commentary of Dūrḡa Simha, edited with notes and indexes, by Dr. Julius Eggeling. One fasciculus with the introduction remains.

The following works are in course of preparation:

5. The *BRĪHADDEVATĀ*, a very interesting metrical work of Saupaka on the deities invoked in the hymns of the Rig Veda, edited by Dr. Rājendralāla Mitra.

6. The *CHARAKA*, the oldest work on Hindú Medicine translated with notes, by Dr. Mahendralála Sarkár.

The following works have been newly sanctioned for publication, and are being prepared :—

7. The *PARÁSARA MÁDHAVA SMṚITI*, to be edited by Pandit Chandra-kánta Tarkálankára, who has just completed an able edition of another law book, the *Gobhiliya Sūtra*.

8. The *SÚSŪTA*, an ancient Hindú Medical work, hardly less important than the *CHARAKA*, to be translated with notes, by Dr. U. C. Datta.

9. The *NAQÁID* of el Ferazdák and Jerir; an extremely interesting work, both from the philological and historical point of view; text and commentary; to be edited by Professor Wright of Cambridge (see Proceedings, 1880, p. 65).

10. The *LÁMIYYET-EL-ARAB*, text, with two English translations, one in prose and the other in verse, by Mr. C. J. Lyall, B. A., C. S.

11. The *MUNTAḤAB-UL-TAWARÍKH* by 'Abdul-Kádir, second volume, by Rev. W. H. Lowe, M. A., of Cambridge. The text, in 3 volumes, has been already published by the Society.

The following is a detailed list of the publications issued during 1881:—

Arabic-Persian Series.

1. *ISÁBAH*, edited by Maulvi 'Abdul Hai of the Calcutta Madrasah, No. 253 (old Series) Fasc. XIX (Vol. III, No. 2).

2. *TARÍKH-UL-KHULFA*, or History of the Caliphs, translated by Major H. S. Jarrett; No. 453, Fasc. VI.

3. *AKBAERNÁMAH*, by Maulvi 'Abdur Raḥím, of the Calcutta Madrasah; Nos. 467, 468, Vol. III, Fasc. I.

Sanskrit Series.

4. *TAITTIRIYA SAMHITÁ*, of the Black Yajur Veda, with the commentary of Mádhava Achárya, edited by Pandit Maheśachandra Nyayaratna. No. 466, Fasc. XXII.

5. *MÍMÁMSÁ DARŚANA*, with the Commentary of Savara Svámin, edited by Pandit Maheśachandra Nyayaratna, No. 470, Fasc. XVI.

6. *VÁYUPURÁṆA*, a system of Hindú mythology and tradition, edited by Dr. Rájendralála Mitra, C. I. E.; No. 457, Vol. II, Fasc. I.

7. *KATHÁ SARIT SÁGARA* or Ocean of the Streams of Story, translated from the Sanskrit by C. H. Tawney, M. A. Nos. 456, 459, 465, Vol. II, Fasc. VII—IX.

8. *NIRUKTA*, with commentaries, edited by Pandit Satyavrata Sámaśrami; Nos. 454, 460, 471, Vol. I, Fasc. II—IV.

9. *CHATURVARGA CHINTAMANI*, by Hemádri, edited by Pandits

Yogeśvara Smṛitiratna, and Kāmākhyānātha Tarkaratna. Nos. 464, Vol. III, Fasc. I.

10. VIṢṢṢU SMṚITI or the Institutes of Vishnu, edited by Dr. Julius Jolly, Professor of Sanskrit, Würzburg. Nos 458, 463. Fasc. I and II.

11. APASTAMBA ŚRAUTA SŪTRA, belonging to the Black Yajur Veda with the Commentary of Rudradatta, edited by Dr. Richard Garbe, Professor of Sanskrit, Königsberg. Nos. 461, 469, Faso. I and II.

12. PĀTANJALA JOGA SŪTRA or the Yoga Aphorisms of Patanjali, with the commentary of Bhoja Rājā and an English translation, by Dr. Rājendralāla Mitra, C. I. E. No. 462, Fasc. I.

13. LALITA-VISTARA or Memoirs of the early life of Śākya Siṅha, translated from the original Sanskrit by Dr. Rājendralāla Mitra, C. I. E. No 455, Fasc. I.

Related with the Bibliotheca Indica is the publication, by the Society, of the ORIENTAL BIOGRAPHICAL DICTIONARY, by the late Thomas William Beale. It has been proceeding for some years under the superintendence of Mr. H. G. Keene, C. S., M. R. A. S., and has been brought to a successful termination during the past year. This is a work of considerable value; it is "intended to be used as a work of reference on matters "connected with Oriental History, and has been compiled by the author "with the greatest care to ensure accuracy in the narrative as well as in "the dates of births, deaths and other events."

List of Societies, Institutions, &c. with which exchanges of Publications have been made during 1881.

Amsterdam:—Royal Zoological Society.

Baltimore:—Johns Hopkins University.

Batavia:—Society of Arts and Sciences.

————:—Kon. Natuur Kundige Vereeniging in Nederlandsch-Indië.

Berlin:—Royal Academy.

Berne:—Swiss Entomological Society.

Bombay:—Bombay Branch, Royal Asiatic Society.

————:—Editor, Indian Antiquary.

Boston:—Natural History Society.

Bordeaux:—Bordeaux Academy.

————:—Linnæan Society.

Brussels:—Royal Academy of Sciences.

Buenos Ayres:—Public Museum.

Calcutta:—Agricultural and Horticultural Society of India.

————:—Geological Survey of India.

Cambridge:—University Library.

Cassel:—Natural History Society.

- Cherbourg:—National Society of Natural Science.
 Christiana:—University Library.
 Colombo:—Royal Asiatic Society, Ceylon Branch.
 Copenhagen:—Royal Society of Northern Antiquaries.
 Dehra-Dun:—Great Trigonometrical Survey.
 Dublin:—Royal Dublin Society.
 —:—Royal Irish Academy.
 Edinburgh:—Royal Society.
 Florence:—Società Italiana di Antropologia di Etnologia.
 Geneva:—Société de Physique et d' Histoire Naturelle.
 Genoa:—Museum of Natural History.
 Halle:—Bibliothek der deutschen Morgenländischen Gesellschaft.
 —:—Die Kais. Leopoldinisch-Carolinische Akademie.
 Königsberg:—Physical and Economical Institution.
 Leyden:—Royal Herbarium.
 Liège:—Royal Society of Sciences.
 —:—Geological Society of Belgium.
 Liverpool:—Literary and Philosophical Society.
 London:—Anthropological Institute.
 —:—British Museum.
 —:—Editor, Academy.
 —:—Editor, Atheneum.
 —:—Editor, Nature.
 —:—Geological Society.
 —:—Institution of Civil Engineers.
 —:—Institution of Mechanical Engineers.
 —:—Linnean Society.
 —:—Royal Society.
 —:—Royal Asiatic Society of Great Britain and Ireland.
 —:—Royal Astronomical Society.
 —:—Royal Geographical Society.
 —:—Royal Institution.
 —:—Royal Microscopical Society.
 —:—Society of Telegraph Engineers.
 —:—Statistical Society.
 —:—Zoological Society.
 Lyon:—Agricultural Society.
 —:—Museum of Natural History.
 Madras:—Literary Society.
 Manchester:—Literary and Philosophical Society.
 Moscow:—Société des Naturalistes.
 Munich:—Royal Academy.

- Munich:—Editor, Repertorium für Experimental-Physik.
 Netherlands:—Royal Society.
 New Haven, U. S.:—Connecticut Academy of Arts and Sciences.
 Oxford:—Bodleian Library.
 Paris:—Anthropological Society.
 —:—Asiatic Society.
 —:—Geographical Society.
 —:—Imperial Library.
 —:—Zoological Society.
 Philadelphia:—Academy of Natural Science.
 Pisa:—Tuscan Society of Natural Science.
 St. Petersburg:—Imperial Library.
 —:—Imperial Russian Geographical Society.
 —:—Imperial Academy of Sciences.
 San Francisco:—Californian Academy of Arts and Sciences.
 Shanghai:—North China Branch, Royal Asiatic Society.
 Simla:—United Service Institution of India.
 Stellenbosch:—Entomological Society.
 Stockholm:—Royal Academy of Sciences.
 Stuttgart:—Natural History Society of Württemberg.
 Sydney:—Royal Society of New South Wales.
 Trieste:—Adriatic Society of Natural Science.
 Turin:—Royal Academy of Sciences.
 Vienna:—Anthropological Society.
 —:—Imperial Academy of Sciences.
 —:—Imperial Geological Institute.
 —:—Zoological Society.
 Washington:—Commissioners of the Department of Agriculture.
 —:—Smithsonian Institution.
 Yokohama:—Asiatic Society of Japan.
 —:—German Oriental Society.
 Zagreb:—Archæological Society.

ABSTRACT OF PROCEEDINGS OF COUNCIL DURING 1881.

January 27th. Ordinary Meeting.

A note by Dr. R. Harvey and Dr. D. B. Smith was read on the subject of Dr. Charles's MSS. of the Nidana and Suśruta, and the plan suggested by Dr. Mitra that the MSS. should be revised and edited by Dr. Uday Chand Dutt was approved of.

A letter was read from the Private Secretary to Sir Ashley Eden, stating that Sir Ashley Eden would be glad to accept the office of President ;

and a letter from the Hon'ble H. J. Reynolds was also read expressing his willingness to be nominated one of the Vice-Presidents.

In accordance with an order passed by the Council the Secretary submitted estimates for printing the Library Catalogue. The matter was referred to a Committee consisting of the officers of the Society, with power to act.

The Council, after consideration, decided not to adopt suggestions made by Mr. J. Burgess for the joint publication by scholars throughout India of a monthly Oriental Journal.

It was resolved that Rs. 20 of the Moulvie's and Rs. 20 of the Pandit's pay should be charged to the Oriental Publication Fund from the date of their engagement.

The Annual Report and Accounts, the budget estimate, and the programme for the Annual Meeting were submitted. The babu employed for indexing the Society's old Records was discharged on the recommendation of the Finance Committee.

The Treasurer submitted a statement showing the Stock of Publications possessed by the Society and the Oriental Publication Fund.

February 24th. Ordinary Meeting.

With reference to a proposal made by Dr. G. W. Leitner that the Society should write to Government and recommend that he should be granted leave to Europe to elaborate the materials he had collected on the languages and races of the N. W. Frontier, it was resolved that the Society could not take the initiative in such a matter, but that the Council would be prepared to express their opinion on the subject if they should be applied to by Government.

A suggestion made by Mr. J. Beames that the Society should endeavour to obtain copies of some of the Jain MSS., mentioned in Dr. Mitra's "Catalogue of Bikancer MSS," was approved of; and the Philological Secretary was empowered to enter into negotiations with Mr. Beames, and was requested to submit a report to the Council when the cost of making the copies was ascertained.

On the recommendation of Dr. J. Anderson, an exchange of publications with the Anthropological and Ethnological Society of Florence was sanctioned.

Mr. V. Ball was appointed Natural History Secretary during Mr. Wood-Mason's absence from Calcutta.

On the recommendation of the Coins Committee, the purchase of some Coins, selected from a lot of 200 found at Nya Doomka, was sanctioned.

The Secretary reported that the Sub-Committee appointed at the last

meeting had resolved that the printing of the Library Catalogue should be entrusted to the Britannia Press, who had agreed to undertake the work at the rate of Rs. 2-2-0 per page, inclusive of binding, for 750 copies. The binding to be of black cloth with the following title on the back "Catalogue of the Library of the Asiatic Society of Bengal, 1881."

It was resolved that the present editor of the Hemádri, whose work had not been found satisfactory, should be allowed to continue the edition on the understanding that Dr. Mitra accepts the responsibility of supervising the work.

Babu Nritya Gopal Bose was appointed Cashier on a salary of Rs. 25 a month rising to Rs. 40 in 10 years' time, in addition to which he is to get 1 per cent. on the collection of subscriptions, entrance fees, credit sales, charges for extra copies of papers, and postage and packing charges.

March 31st. Ordinary Meeting.

Read the Minutes of the Council on the list of instructions drawn up by Mr. J. C. Douglas for keeping and auditing the accounts of the Society. The suggestions made by the Members of Council were adopted and 100 copies of the instructions were ordered to be printed off.

A circular was read from the German Oriental Society inviting the President or one of the Council of the Asiatic Society to be present at the Fifth International Congress of Orientalists to be held in Berlin on the 12th to the 17th September 1881. The Secretary was requested to convey the thanks of the Asiatic Society for the invitation, and to express their good wishes for the success of the Congress and their regret that the Council are unable to send a representative.

The publication, in the Bibliotheca Indica Series, of the Parásara Mádhava Smṛiti and Naqáid of el Ferazdaq and Jerir and of the continuation of the Hemádri and Akbarnámah was sanctioned.

On the submission of the Indian Museum's Register of Presentations made to it by the Society, for signature in accordance with section 12 of Act XXII of 1876, the Council recommended that in future a preliminary inventory should be sent with the specimens, and that the final record in the Society's Register should be copied from the Museum Register; and also that the signature of the Society's Secretary on the one side and that of the Secretary to the Trustees on the other should be held sufficient. A copy of this resolution was ordered to be forwarded to the Trustees of the Indian Museum for consideration; and the Society's Register of objects transferred to the Indian Museum up to date was ordered to be copied from the Indian Museum Register.

The elections of Mr. J. A. Brown and Rev. J. S. Doxey were cancelled as they had not paid their admission fee and first quarter's subscription.

Mr. V. Ball was appointed Treasurer in the place of Mr. J. Douglas who had left for England.

April 28th. Ordinary Meeting.

A letter was read from the Under-Secretary to the Government of Bengal, Revenue Department, stating that the Lieutenant Governor approves of the manner in which the Government grants to the Oriental Publication and Sanskrit Manuscripts Funds have been spent, and that he accepts the suggestion made that the accounts of the latter fund should, for the future, be submitted to Government once, instead of twice, in the year.

An exchange of publications with the North-China Branch of the Royal Asiatic Society and the Johns Hopkins University of Baltimore was sanctioned.

On the resignation of Mr. A. Pedler as Honorary Secretary, Member of Council, and Trustee of the Indian Museum, it was resolved that Dr. H. W. M'Cann should be asked to become a Member of the Council and to take up the Secretaryship and that Mr. J. Eliot should be asked to become Trustee of the Indian Museum on behalf of the Society.

A vote of thanks was given to Mr. A. Pedler for his services as Honorary Secretary.

The Members of the various Committees for the year 1881 were appointed.

The appointment of a copyist, on Rs. 15 a month, was sanctioned.

May 26th. Ordinary Meeting.

An exchange of publications with the Kais. Leopoldinisch-Carolinische Akademie of Halle was sanctioned.

At the request of the Superintendent, the casts of the inscriptions from the rock-cut Temples of Orissa were ordered to be made over to the Indian Museum.

A Report submitted by Mr. J. Westland and Col. J. Sconce, the auditors of the Society's accounts for 1880, was ordered to be forwarded to the Treasurer for circulation to the Council with any remarks he may wish to add.

Dr. A. F. R. Hoernle, Dr. R. Mitra, Mr. J. Beames and Mr. C. H. Tawney were requested to select two or three of the Jain MSS. in the Library of His Highness the Maharaja of Bikaner and to make arrangements for having them copied with the assistance of the Maharaja's Pandits.

Read the Minutes of the Philological Committee on a letter from Professor E. B. Cowell offering for publication in the Bibliotheca Indica

a translation of Vol. II of Abdul Kādir's Muntakhab ul Tawarikh, prepared by the Rev. W. H. Lowe. It was resolved that the question should be postponed until the receipt of the reply to a letter from the Philological Secretary asking Mr. E. B. Cowell for further particulars.

On the recommendation of the Philological Secretary, the new rule passed by the Oriental Library Committee that not more than one MS. could be lent out to any member at a time was rescinded, and it was resolved to revert to the old rule which allowed the issue of two MSS. at a time.

A recommendation of the Finance Committee that the Society should subscribe annually for the future numbers of the Ray Society's publications was approved of.

June 30th. Ordinary Meeting.

A letter was read from Mr. A. Grote stating that two gentlemen, *viz.*, Count de Noe and Col. W. Munro, still on the list of the Society's Honorary Members, were certainly dead; and giving reasons for believing that two other Honorary Members, *viz.*, Sir John Phillippart and Professor Isaac Lea were also dead. It was resolved that the Philological, Natural History and Physical Science Committees should each be requested to select and nominate three gentlemen as Honorary Members.

A letter was read from the Honorary Secretary to the Trustees, Indian Museum, stating that the Trustees approve of and will adopt the suggestions made by the Council of the Asiatic Society for recording the transfer of specimens to the Museum.

In reply to a letter from Mr. J. Dawson, the Secretary was requested to inform him that the Council have no objection to his paper published in the Journal for 1870 being reprinted by the Government of the Central Provinces.

A vote of thanks to Mr. J. Westland and Col. J. Sconce, the auditors of the Society's accounts for 1880, for the report they had submitted was passed; and their suggestion that the value of the stock of books be not entered in the accounts as an asset was adopted.

The Philological Secretary reported that, at the request of Mr. J. E. P. Lincke, he had made over to the Indian Museum the Antiquities found at Jowhri Dih; and that Mr. F. S. Growse had requested him to present the curiosities he had forwarded to illustrate his paper, read at the June Meeting, to the Indian Museum.

A copy of Mr. Douglas's Memorandum of Instructions was ordered to be sent to each Member of the Council in Calcutta.

A recommendation of the Finance Committee that the budget allowance of Rs. 500 for postage for the year 1881 be increased to Rs. 1,000, as the grant had been exceeded in consequence of changes in the mode of distributing the Society's publications, was sanctioned.

July 28th. Ordinary Meeting.

A stone slab bearing an inscription, presented to the Society by Mr. F. C. Black, was ordered to be acknowledged with thanks.

Messrs. Mackintosh, Burn & Co.'s estimate for Rs. 350 for repairing the road in the Society's compound and raising the gate, was accepted.

August 25th. Ordinary Meeting.

Mr. H. M. Percival was elected an Ordinary Member of the Society.

A letter was read from the Under-Secretary to the Government of Bengal conveying the Lieutenant-Governor's approval of the manner in which the Government grants on account of the Oriental Publication and Sanskrit Manuscripts Funds have been applied.

The Secretary reported that the bust of the late Mr. Blochmann had been received, and requested instructions as to its disposal. The Secretary was requested to ascertain whether the bust could with safety be placed on the upper floor and to make enquiries as to the cost of a suitable pedestal.

An exchange of the Proceedings and Journal, Part II, for the Journal of the K. Natuurkundige Vereeniging in Nederlandsch Indië was sanctioned.

A letter was read from Professor Wright of Cambridge expressing his thanks to the Society for appointing him to edit the Naqáid of Jerir and el Ferazdaq in the Bibliotheca Indica, but regretting that he will not be able to do so for a year or two, owing to other engagements. The Philological Secretary was requested to inform Professor Wright that the Society had no objection to his commencing the work at his own convenience.

Mr. C. J. Lyall's offer to edit for the Bibliotheca Indica the Arabic poem Lámiyyet-el-Arab was accepted with thanks.

A letter was read from Mr. E. B. Cowell, stating that Mr. W. H. Lowe agrees to prepare a translation of the 2nd volume of Abdul-Kádir's Mu-takhab-ul-Tawarikh and to publish the work in Calcutta, for a fee of Rs. 2 per page. This arrangement was sanctioned.

Read the Minutes of the Council regarding additions to be made to the distribution list of the Bibliotheca Indica. It was resolved that the extended distribution list should be used in the future; and that the Foreign Office should be requested to give such information as will assist in framing a list of native Rajahs and Chiefs to whom the publications of the Bibliotheca Indica may be distributed gratuitously.

September 22nd. Ordinary Meeting.

Mr. Chr. J. Bandow was elected an ordinary Member of the Society.

A request of the Batavian Society of Arts and Sciences that they

might be supplied with some Nos. of the Journal and Bibliotheca Indica which were wanting in their sets of these publications was agreed to, and it was ordered that the name of the Batavian Society should be entered on the free distribution list of the Bibliotheca Indica.

An advance of Rs. 600 applied for by Dr. R. Mitra to be expended in the search for Sanskrit Manuscripts was sanctioned.

The Secretary reported that he had ascertained that the bust of the late Mr. Blochmann could with safety be placed on the upper floor with certain precautions, and submitted estimates for the cost of a pedestal. Messrs. Llewelyn & Co.'s estimate for Rs. 300 was accepted.

The elections of Mr. R. O. Lees, Babu Peary Mohun Guha and Babu Troilokyanath Mitra were cancelled in accordance with the provisions of Rule 9, as they had failed to pay their admission fees and first quarter's subscriptions.

October 27th. Ordinary Meeting.

A letter was read from the Superintendent, Marine Survey Department, enquiring if the Society was prepared to make over the deep sea dredging apparatus referred to in the Society's letter dated 14th May 1878. It was ordered that the apparatus be made over to the Marine Survey Department and that the Natural History Secretary be requested to prepare for the assistance of Council a Memorandum on the Society's position with reference to deep sea dredging, with a view to communicating with the Government of India on the subject.

A letter was read from Mr. W. T. Blanford giving particulars regarding the cost of printing the plates illustrating his paper on the Arvicola. It was resolved that the Society should pay all Mr. Blanford's expenses for these plates.

The thanks of the Council were ordered to be conveyed to Mr. V. Ball for his services as Treasurer and Natural History Secretary, and it was resolved to recommend the Society to present him with its publications for the rest of his life.

The nominations of the Philological, Natural History and Physical Science Committees of 3 gentlemen each as Honorary Members were submitted, and the following 4 gentlemen were selected for recommendation to the Society for election as Honorary Members:—Professor W. Wright, Dr. R. von Roth, Sir William Thomson and Professor H. L. F. Helmholtz. It was resolved to recommend that the fifth vacancy in the list of Honorary Members should be left unfilled for the present.

December 1st. Ordinary Meeting.

A vote of thanks was passed to his Highness the Maharajah of Bikaner for two MSS. presented by him to the Society.

On the recommendation of Dr. R. Mitra, a set of the Bibliotheca Indica was ordered to be presented to the Carmichael Library, Benares.

Two letters from the Superintendent, Marine Surveys were read, requesting that certain articles of the sea dredging apparatus should be made over to Dr. J. Anderson and the remainder sent to the Marine Survey Department. Also requesting that he may be favoured with copies of the communications that may be made to the Government of India, relative to the Society's position as regards the dredging operations that are to be carried on in the "Investigator;" and stating that he intends to apply for the services of Mr. Murray as Naturalist to the vessel.

The Treasurer reported that the Finance Committee had resolved that the Commission for collecting bills on account of the Oriental Publication Fund should be paid out of that Fund and that the question of charging a portion of the Cashier's pay to the Oriental Publication Fund should be submitted to the Council for consideration and orders. It was decided that it was unnecessary to charge any portion of the Cashier's pay to the Oriental Publication Fund.

The Secretary reported that a beam required changing. It was ordered that the beam should be changed and that Messrs. Mackintosh, Burn & Co. should be requested to examine the other beams and report on their condition.

December 29th. Ordinary Meeting.

An increase of Rs. 10 per mensem in the pay of the Assistant Librarian was sanctioned.

The Secretary reported that certain articles of the deep sea dredging apparatus had been made over to Dr. J. Anderson and that the remainder had been sent to the Marine Survey Department.

The CHAIRMAN announced that the Scrutineers reported the result of the election of Officers and Council as follows:—

President.

Sir Ashley Eden, K. C. S. I., C. I. E.

Vice-Presidents.

Dr. Rájendralála Mitra, C. I. E. The Hon. J. Gibbs, C. S. I., C. I. E.
The Hon. H. J. Reynolds, B. A., C. S.

Secretaries and Treasurer.

J. Wood-Mason, Esq. Dr. A. F. R. Hoernle. Dr. H. W. M'Cann.
J. Eliot, Esq., M. A.

Other Members of Council.

H. B. Medlicott, Esq., F. R. S. J. Westland, Esq., C. S. D. Waldie, Esq., F. C. S. H. F. Blanford, Esq., F. R. S. Nawáb Abdul Latif, Khan Bahadur. Major J. Waterhouse, B. S. C.

At the suggestion of the Chairman, it was resolved to ask Mr. J. Westland and Major Waterhouse to audit the Annual Accounts.

The Meeting was then resolved into the Ordinary Monthly General Meeting.

Dr. RÁJENDRALÁLA MITRA, C. I. E., Vice-President, in the Chair.

The minutes of the last Meeting were read and confirmed.

The following presentations were announced—

1. From Prof. A. Weber,—*Verhandlungen des Fünften International Orientalisten Congresses gehalten zu Berlin im September 1881. Erster Theil.*

2. From Dr. R. Mitra,—*Emlékbeszéd William Stephen Atkinson külső tag felett*, by Dr. Theodore Duka.

3. From A. Constable, Esq.,—A Selection from the Illustrations which have appeared in "The Oudh Punch" from 1877-81.

4. From the Home Department,—(1) Major General Sir Thomas Munro, Bart., K. C. B., Governor of Madras. Selections from his minutes and other official writings; (2) The Imperial Gazetteer of India, vols. I-IX by W. W. Hunter.

5. From Lieut. R. C. Temple,—*The Sassí Punnún of Háshim Sháh* in 3 Parts.

6. From the author,—*Sanskrit-Wörterbuch in kürzerer Fassung, Part III*, by Otto Böhtlingk.

7. From the Committee,—*Verhandlungen des Fünften International Orientalisten-Congresses gehalten zu Berlin im September 1881. Erster Theil.*

8. From Mr. J. Winterscale,—A copper plate grant from Outtaek.

The following gentlemen are candidates for ballot at the next meeting:

Syed Amir Hussain Khan Bahadur, Deputy Magistrate, Suburban Police, proposed by Dr. A. F. R. Hoernle, seconded by Dr. H. W. M'Cann.

Pringle Kennedy, Esq., M. A., proposed by H. Rivett-Carnac, Esq., C. S., seconded by Dr. A. F. R. Hoernle.

J. M. Douie, Esq., C. S. Lahore, proposed by D. Ibbetson, Esq., seconded by Jas. Wilson, Esq.

The following Gentlemen have intimated their desire to withdraw from the Society:

H. H. Locke, Esq.

Captain H. A. Sawyer.

The CHAIRMAN announced that a letter had been received from Major L. A. Huguet-Latour, Vice-President of the 'Natural History Society of

Montreal, stating that a Scientific Congress would be held at Montreal in August, 1882, under the auspices of the American Association for the advancement of Science, and inviting Members of the Asiatic Society to attend the Congress, or to send papers to be read at its meetings. Arrangements had been made with various Steamship Companies to convey guests invited to the Congress free of charge.

The Chairman also read a letter from Prof. Ch. Lindeman, Secretary to the "Société Impériale des Naturalistes" of Moscow, inviting members of the Asiatic Society to take part in a Congress to be held in May, 1882, in honour of their Vice-President, M. Charles Renard.

Dr. RĀJENDRALĀLA MITRA exhibited a collection of coins of the Shah Kings of Surāshṭra, received from Mr. H. Rivett-Carnae, and read the following notes on them :

Some time ago I received from our enthusiastic and indefatigable associate, Mr. Rivett-Carnae, a necklace made of three large and sixty-two small silver coins, which he wished me to examine. The coins had little loops so soldered on their edges as not in any way to injure them; but they were mostly in a bad state of preservation, with the legends obliterated in many cases. I have availed myself of my friend's permission to separate the coins, which were held together by small silver links, whose points not having been soldered could be easily detached.

The three large coins belong to the mintage of Nepal. One of them (No. 1) is of Rājendra-vikrama Shāh, and bears date Śāka 1738, and the other two are of Surendravikrama Shāh, dated, No. 2 Śāka 1776 and No. 3, Śāka 1792, respectively.

The small coins are obviously from Guzarat, but the exact locality where they were found is not known. They all belong to the Shāh kings of Surāshṭra, but 19 of them are so defaced that no name can be read on them. The others represent the following reigns :

1. Rudra Siṅha, son of Rudradāma (the 3rd king of the line according to Mr. Newton's list).

2. Rudra Śāh, son of Rudra Siṅha (4th king).
3. Yasadāma, son of Dāma Śāh (6th king).
4. Iśvaradatta. (9th king).
5. Vijaya Śāh, son of Dāma Śāh (10th king).
6. Rudra Śāh, son of Viradāma (12th king).
7. Viśva Siṅha, son of Rudra Śāh (13th king).
8. Atridāma, son of Rudra Śāh (14th king).
9. Viśva Śāh, son of Atridāma (15th king).
10. Rudra Śāh, son of Jinadāma (16th king).
11. Aśadāma, son of Rudra Śāh (17th king).

James Prinsep was the first to bring to public notice this class of coins, and to prepare a sketch which has since been filled up, by the labours principally of Mr. Thomas and Mr. Newton, with notices of nineteen kings whose names do not occur in any historical record. Mr. Newton's paper, in the 7th volume of the Journal of the Bombay Asiatic Society, is, I believe, the latest contribution on the subject, and it is so full, having been written after a very careful examination of several hundred specimens, that little remains to be added, as regards the coins that have been already discovered. The coins before me do not contribute any new name; nor do they throw any additional light on the history of the kings noticed. There are, however, some points in the decipherment of the legends which suggest a few remarks.

The first point is the title *Kshatrapa* which the kings assume. When Prinsep first read the legends, he found, after the initial title *rājña* "of a king," certain letters which he read *kritrima*, in others *mahākritrima*. Commenting upon them he said, "The second word of the title I read *हविमस* for *हविमस्य* *kritrimasya*, genitive of *kritrima*, which is translated in Wilson's Dictionary "made, factitious, an adopted son" (for *kritrima-putra*). The latter sense was inadmissible, because it so happened that the name of the actual father was, in every case, inserted and the same title was also applied to him. The only manner, therefore, in which the term could be rendered was by 'elected,' 'adopted'—(by the people, or by the feudal chiefs of the country)—a designation entirely new in Indian numismatics, and leading to a highly interesting train of reflection, to which I must presently recur. Sometimes the epithet *mahā* is affixed—not to *rājā*, but to *kritrima*, as *rājā mahākritrima*, the 'great or specially elected king'—as if in these cases he had been the unanimous choice of his people, while in the others he was installed merely by the stronger party in the state." He had, however, to change this opinion when he deciphered the Jūnagar inscription of Rudradāma. There the reading was distinctly and most unquestionably *mahākshatrapa* (Thomas' Prinsep, II, p. 63), and this reading has since been generally adopted. It is worthy of note, however, that the crucial letter in the word is the 3rd. If we read it *m* (ॠ) the reading should be *kritrima*, but if we take it for *p* (प) the reading would be *kshatrapa*, the mechanical configuration of the first two compound letters being such that they admit of either reading. Now the letter *p* occurs on all the coins either as a square with the top open and a perpendicular stroke at the anterior corner, thus ५, or as a perpendicular line with a curved spur at the middle on the left side, thus ५. The curvature of the spur varies greatly in different specimens, but the leading perpendicular line is constant. This is, however, not the letter that we meet in the title; there it occurs like the English letter V formed of two oblique lines with the

lower ends in some cases projecting below the angle, thus *Y*. It is generally found in the same form in the word *mahá*, but in some cases thus *V*. In unquestionable test words such as *putrasa* or *prathama* the *p* never assumes this form in any of the 62 specimens now before me, nor in some 50 specimens that I had seen before, nor also in the various plates published by Wilson, Prinsep, Thomas and Newton. Mr. Newton had between five and six hundred specimens before him, and was, therefore, in a much better position to pronounce authoritatively on the subject than I am; the evidence at hand would suggest the idea that there is room yet to raise the question as to whether the word should be read *kṛitrima* or *kṣhatrapa*; but, bearing in mind the fact that the evidence of the coins is doubtful and unsatisfactory while that of the inscription is unquestionable, adherence must be given to the latter.

The next point is as to whether the word *dama* should be read with two long vowels, or with the first vowel long and the second short. The original form of the word in the Sanskrit language is *dāman*, a "garland," and that this is the word used in the coin is evident from the possessive form in which it is used being *dāmna*. In the nominative singular *dāman* becomes *dāmá*, but when it is a member of a compound term, as in *Viradāma*, the last vowel should be short, and the word declined as a theme ending in *a* and not *n*. The writers of the legends, however, seem to have been unmindful of this grammatical distinction. In the coin of *Rudradāma*, the possessive is as it should be *Rudradāmāsa*, but in those of *Atridāma* and *Asadāma* the corrupt forms of *Atridāmna* and *Asadāmna* have been used.

The last point to which I wish to refer is as to the religion of the Śāh kings. According to Prinsep it was Buddhism. He said—"It is remarkable that, in the long string of epithets applied even to *Rudradāmá*, the chosen Satrap, there is none which bears the slightest allusion to Hindu mythology; while, on the other hand, the coins of the whole dynasty bear an emblem we have hitherto considered either of Mithraic or of Buddhist import. The name of *Jina Dāmá* ('Wearing Buddha as a necklace') is decidedly Buddhistic; and the epithet applied in the inscription to *Rudra Dāma*—who from right persuasion never put any living creature to death—proves that *Rudra's* opinions were at any rate influenced by the proximity of the important Buddhist establishment at *Girnar*." Mr. Thomas demurs to this. He says, "As it is not proposed to show that the Śāhs were Brahmanical Hindus, the first point requires neither comment nor answer; in respect to the second, as the word *Jina* can now be proved to have been incorrectly read in the place of *Jiwa* the argument founded on the previous interpretation at once falls to the ground; and for the third position, it also is equally based on error, arising from an inaccurate render-

ing of the original passage in the inscription; notwithstanding all this, there is some reason to concur in the idea itself, that the Sáh kings were 'influenced by the opinions of the Buddhists, though this by no means implies a complete desertion of the old faith.' " (J. R. A. S., XII, p. 28.)

The first argument of Prinsep appears to be unaccountably hasty. The word Rudra is positively and unquestionably Hindu. It occurs in the Vedas as the name of a god, and for the last two thousand years and more has been accepted as an *alias* of Siva; and this name is just what the Sáh kings most affected. The word *Íśvara* in Íśvaradatta is also another positively Hindu word which the Buddhists never recognised. It is the name of the Supreme divinity, which the Buddhists, at least the early Buddhists, never acknowledged; and these two words should leave no doubt in the mind that the earlier Sáh kings were Hindus. The word Atri, the name of a Hindu sage, supports this inference.

As regards the second argument the correction suggested by Mr. Thomas seems not to be tenable. The letter in my specimen is *n* and not *v*, and in the numerous specimens which Mr. Newton had before him he found *n*; at least he, having Mr. Thomas's essay before him, did not accept the reading Jiva. Jina, however, does not necessarily imply Buddhism. Seeing that Jainism prevailed and still prevails in Western India, the presumption is strong that Jainism is what is implied by the term, and not Buddhism. Jinadâma was not one of the Sáh kings; his title is *svâmi*, or a priest, a learned Bráhmaṇ, or a saint, whose son Rudra Siṅha became the 16th king, and the inference these facts would suggest is, that the earlier kings were all Brahmanical Hindus, and on a change of dynasty the 16th king became a Jain, and the three subsequent kings with whom we are acquainted followed his faith. Nor need the symbolic indications or the obverse stand in the way of this inference. The central symbol is a tumulus formed of three segments of circles placed on a curved or wavy line, and Prinsep took it for a chaitya, which at once allied the kings with Buddhism; but on the other hand the crescent moon, the sun, and the stars associated with it are decidedly Hindu; and if the symbols be of a religious character it is difficult to reconcile them with the assumption that the tumulus means a chaitya. I am disposed, therefore, to accept the tumulus to stand for a mountain, "the sunrise hill," *Udayagiri*, over which the celestial luminaries are placed, or "the hill city," (*Girinagara* referred to in the Girnár record), which formed the capital of this dynasty of kings. The simplest way of depicting a hill is by putting together segments of circles, and this is exactly what has been done on the coins; there was neither space enough on the coins, nor talent sufficient at command to do any thing better. If this conjecture be accepted it would follow that the earlier Sáh kings were heliolaters, and from that the later ones passed to the worship of the Tirthankaras.

LIST OF COINS.

NEPALESE COINS.

- No. 1. Rājendravikrama Sháh, of Nepal, Saka 1738.
 No. 2. Surendravikrama Sháh, of Nepal, Saka 1776.
 No. 3. Ditto ditto Saka 1792.

SÁH COINS.

Rudra Siñha, 2nd King.

No. 4. Rudra Siñha, son of Rudradáma. *Obverse*, head disfigured, no Greek legend, nor date. *Reverse*, Legend imperfect—Rājña kshtrapasa—
 Rudra Siñhasa.

Rudra Sáh, 3rd King.

No. 5. Rudra Sáh, son of Rudra Siñha. *Obverse*, head in low relief. No Greek, nor date. *Reverse*, legend imperfect.

Yasadáma, 6th King.

No. 6. Yasadáma, son of Dáma Sáh. *Obverse*, head as usual, Greek legend illegible, Date, 3—figures with tops cut off. *Reverse*, legend imperfect. Rājña mahá kshatrapasa Dámasáhaputrása rájna.

No. 7. Ditto. *Obverse*, no Greek, nor date. *Reverse*, ditto.

Íśvaradatta, 9th King.

No. 8. Íśvaradatta. *Obverse*, head in good relief, Greek legend illegible, no date. *Reverse*, legend complete. Rājña mahákshatrapasa Íśvaradattasa varshe prathame.

Vijaya Sáh, 10th King.

Nos. 9 and 10. Vijaya Sáh, son of Dáma Sáh. Greek legend on the *obverse* illegible. *Reverse*, Rājña mahákshatrapasa Vijaya Sáhása rájna mahákshatrapasa Dáma Sáhása putrasa.

Rudra Sáh, 12th King.

No. 11. Rudra Sáh, son of Viradáma. *Obverse*, head in good relief. Date imperfect; no Greek. *Reverse*, Rājña kshatrapasa Viradámaputrása rájna mahá kshatrapasa Rudra Sáhása.

Nos. 12 to 24. Ditto ditto *Reverse*, legend in most specimens imperfect.

Viśva Siñha, 13th King.

No. 25. Viśva Siñha, son of Rudra Sáh. *Obverse*, head in low relief, very much defaced, remnants of Greek letters. *Reverse*, legend defaced. Rājña kshatrapasa Viśva Siñhasa rájna kshatrapasa Rudra Sáhása.

No. 26. Ditto ditto Latter half of the legend wanting.

Atridāma, 14th King.

No. 27. Atridāma, son of Rudra Sāh. *Obverse*, head very much defaced. *Reverse*, imperfect. Rājña kshatrapasa Atridāmna rājña—.

Viśva Sāh, 15th King.

No. 28. Viśva Sāh, son of Atridāma. *Obverse*, head bad, remnants of date and Greek. *Reverse*, Rājña kshatrapasa Viśva sāhasa Atridāma-putrasa.

No. 29. Ditto ditto, only half of the die has struck the blank.

Nos. 30 to 32. Ditto ditto imperfect.

Rudra Sāh, 16th King.

No. 33. Rudra Sāh. son of svāmi Jinadāma. *Obverse*, head coarse, no Greek, nor date. *Reverse*, Rājña kshatrapasa Rudra Sāhasa svāmi Jinadāma ———.

No. 34. Ditto ditto

No. 35. Ditto ditto

No. 36. Ditto. *Obverse*. Head in good relief, with remnant of Greek legend. *Reverse*, supplies the concluding part of the legend.

No. 37. Ditto ditto

Aśadāma, 17th King.

No. 38. Aśadāma, son of Rudra Sāh. *Obverse*, traces of Greek legend. *Reverse*, Rājña kshatrapasa Aśadāmna rājña kshatrapasa Rudra Sāhasa putrasa.

Uncertain.

Nos. 39 to 43. ——— ? son of Rudra Sāh. Rājña kshatrapasa Rudra sāhasa putrasa ——— ?

Nos. 44 and 45. ——— ? son of Rudra Sāh. *Reverse*, Rājña kshatrapasa ——— Rājña maha kshatrapasa Rudra sahaputrasa. Śrī Sāh, Dāmajaṭa Śrī, Viśva Siñha, Atridāma and Aśadāma, were sons of different Rudra Sāhs, but there is nothing to determine to which of them these coins should be assigned.

Nos. 46 to 65. No name legible.

Mr. GIBBS said he thought the Society was much indebted to Dr. Mitra for the trouble he had taken with reference to the coins on the table which were in as bad a condition as any he (Mr. Gibbs) had seen. He had come hoping that the necklace which Mr. Rivett-Carnac had sent was one belonging to his connection Mrs. Temple which Mr. Gibbs had examined at Poona in 1877 or 1878, and which contained two or three new varieties, but he had been disappointed. Coins of this series had of late years become common. He had a good many himself, and Mr. Newton

had from time to time acquired large numbers: it was only some few that were difficult to procure, but Dr. Mitra had given them an interesting paper on very poor materials.

Mr. Gibbs then exhibited a gold Ramtinki which was handed round. It was cup-shaped, $1\frac{1}{2}$ in. in diameter, and had in the interior Ram and Sita seated on a musnud, with three attendants on the left of the spectator, and four on the right; on the back was Hanuman the monkey god, and round him an inscription which had not been read; weight 1 tola 2 annas. Mr. Gibbs explained that he had been led to bring this coin as he had noticed in a recent volume of the Proceedings that his friend General Pearce at Madras had sent one which had been figured; but this was an imitation, and one of those flat ones now made for pilgrims at one of the shrines near Bellary. During the famine of 1876-77, Mr. Gibbs had obtained 7 or 8 of these curious pieces, two of 4 tolas each, the rest of 1 tola; 3 of them had been known to have been part of the treasure of a temple in the S. M. country for 600 years, and were sold during the time of distress; there is a 2 tola one in the Museum of the Bombay Branch of the R. A. Society, which formed part of the late Mr. W. E. Trevor's collection. Mr. Gibbs had not had time to prepare a paper on these curious objects of worship rather than coins. They were used in washing the idol with gold which was done by pouring gold coins over it. But he had seen sufficient to know that the older ones were of the poorer gold, being much alloyed with silver, whereas the modern ones are nearly all of very good if not pure gold. He hoped before long to be able to bring out a paper on this subject, and in the mean time should be glad of any information he could get regarding these pieces.

Dr. MITRA exhibited four silver coins lately received from Mr. Cockburn, who obtained them from E. Rose, Esq., C. S., Joint-Magistrate of Kirwee, in the vicinity of which town they were discovered. The coins were in a very bad state of preservation, and originally had been very badly prepared, the disks being about half the size of the dies with which they had been struck. From slight remains of the legend one of the coins appeared to belong to the class of the Varāha coins, and the others to the Kanauj group of the 11th century with two balusters on the reverse, as figured in Prinsep's *Indian Antiquities*, Vol. I, plate XXIV, fig. 17.

Mr. J. COCKBURN exhibited a Panchamukha Lingam, and said:—

The object exhibited this evening is a multiple Phallus of an uncommon shape known as a Panchanan or Panchmukhi ling. It was found by me along with a heap of fragments of sculpture, celts &c. on a

small platform just outside the village of Uchah in the Augassie pergunnah of the Banda district. There was another larger specimen in the same place which varied a good deal in detail, but was too heavy to remove easily. They both lay comparatively unnoticed among the other fragments, and it would not appear that the people of this village attached any importance to them, though worshippers of Shiva and Parvati in the personifications of the Ling and Yoni. The significance of these latter emblems I have found to be fully understood by every intelligent Hindu I have questioned on the subject.

The glorious science of Anthropology marks the dawn of a new era in philosophy, and no apology is I conceive needed for describing an emblem worshipped in some shape or other by two-thirds of those professing the Hindu religion.

The only reference I have been able to find to the Panchanan ling is by Lieut. F. Maisey in his account of the antiquities of Kalinjar, J. A. S. Vol. XVII, pp. 177, 187, 198, Pl. XIII, fig. 22. No description has been given and the specimen figured in Plate XIII is a purer and more conventional form than any I have come across.

The specimen figured by Lieut. Maisey may be described as a group of five hemispherical prominences arranged in a quinquarticular shape in the centre of a square: with four smaller similar groups at the four angles. The slab is often thick and the surface is excavated while a small spout projects on one face for the purpose of draining off water. This spout may represent the fourchette of a yoni formed by the inscribed square.

The specimen found by me is a block of mottled sandstone about $6\frac{1}{2}$ inches square on the surface and $3\frac{1}{4}$ inches thick. The side faces are ornamented with the usual moulding which has the effect of giving it the appearance of a miniature altar. Slots in the basal angles indicate that it was clamped to some larger object. The upper surface is excavated to the depth of a quarter of an inch and the spout has been broken off. It thus forms a bagha or yoni. This inner square is occupied by four hemispherical prominences $2\frac{1}{2}$ inches in diameter arranged in a quartette, one in each angle of the square while in the centre is a similar hemisphere more prominent than the others and raised about half an inch higher. The arrangement is thus quinquarticular. Attached to the central hemisphere is a small perpendicular Priapus, which in the specimen left behind had evidently a well marked glans. Between each of the hemispheres is a small ridged keel an inch in length. This keel, the central portion of which is concealed, is in the shape of a crux ansata.

Without any offence to delicacy I will attempt to interpret this symbol. The central hemisphere and erect projection represent a basal view

of the male generative organ. The four outer hemispheres taken in conjunction with the central one represent a pair of testes in any direction it is possible to view the sculpture. The ridged keels represent the median raphe of the scrotum. This last surmise has received unexpected confirmation in a specimen of a Puncbanan ling from Kalinjar in the collection of the Indian Museum. In this specimen the artist has hit upon the expedient of serrating the ridge in imitation of the plications of the scrotum when contracted by cold.

Dr. Inman in his work 'Ancient Faiths and Modern' has collected much curious and forgotten lore regarding the prevalence of a Phallic element in past and existing religions. A note bearing on the subject I here quote: "The godhead among the Mesopotamians was a quartette equivalent to the Hebrew Arba signifying four."

According to Dr. Inman the crux ansata is a symbol of the union of the sexes, and the Fleur de lys represents the malo triad. I have just come across a picture of a Pope by Guercino engraved by Bartolozzi where the Pontiff is represented holding in his hand a book on which rest three spheres in a triangular arrangement. The picture bears no name and the date of work is not given.

Mr. COCKBURN read the following note on torsion in the awns of Spear Grass, which he had contributed to the "Asian."

"Enclosed are some spikes of a small species of spear grass, in which I observed a remarkable property of spontaneous movement. The subject is one of some economic importance, as this grass threatens to overrun the entire district, and is very difficult to eradicate. On the 16th March 1881, while camped at Ackbye (ten miles north east of Banda, N. W. P.), I had occasion to wash my hands, the water used saturating the ground. Looking down, I happened to observe some minute objects in motion, which I took for some form of animal life. I accordingly knelt down and examined them closely.

"I found that the objects were these grass seeds. As soon as the earth in the vicinity was moistened, they began to unravel themselves with a peculiar spiral motion, the effect of which was to bury the entire seed in the soil till only the extreme (filiform) tip remained visible. By this process, they became perfectly straight, and as they invariably went down point first perpendicularly, they not inappropriately resembled arrows when pulled out again.

"I tried a series of experiments within a radius of 200 yards of my tent, and found that the ground was simply alive with these seeds, and that they began their burrowing movements whenever the soil was moistened.

"The soil was mar (black cotton) in a partly pulverised condition on the surface. I shall be happy to furnish further particulars if the subject has not been observed before, and is of interest.

"Dr. King, the eminent botanist, was so kind as to reply to my letter. and I take the liberty of quoting a portion of his letter:—

"Your observations are of much interest. The phenomenon of torsion in the appendages of seeds has been observed before, and an elaborate paper on the mechanism of the torsion in seeds by Mr. Francis Darwin appeared in the Linnæan Transactions in 1876. In that paper Mr. Darwin suggests that the use of torsion to a seed may be to enable it to bury itself in the soil. You have seen the seeds in the act of being buried, and it would be of much interest if you continued your observations.'"

The following papers were read:—

1. *The Rise and Progress of Buddhism in Thibet.*—By SARAT CHANDRA DAS.

2. *The Lives of the Tas'i Lamas.*—By SARAT CHANDRA DAS.

These papers will be published in full in the Journal, Pt. I, for 1882.

3. *On the habits of a little known lizard, Brachysaura ornata.*—By J. COCKBURN, Indian Museum.

This paper begins with a résumé of the literature relating to this hitherto rare species of lizard. Its range as at present known is then discussed. A minute description of the reptile follows with measurements and details of coloration. The author has been enabled to make a large number of interesting observations on the habits of *Brachysaura*, among which may be mentioned the discovery of the erectile nature of the tissue below the nuchal and dorsal crests and the faculty of voice. Perhaps the most important of these remarks is the supposition that *Brachysaura* possesses a protective odour and taste.

This paper will be published in the Journal, Pt. II, for 1882.

LIBRARY.

The following additions have been made to the Library since the Meeting held in January last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

- Baltimore. American Journal of Mathematics,—Vol. IV, No. 1.
 Batavia. Observations made at the Magnetical and Meteorological Observatory, 1879-1880.
 ———. Rainfall in the East Indian Archipelago, 1880.
 Berlin. Entomologische Zeitschrift,—Vol. XXV, Part 2, 1881.
 ———. K. preussische Akademie der Wissenschaften,—Monatsbericht, November 1881.
 Bombay. The Indian Antiquary,—Vol. X, Parts 126-127, December 1881.
 Bordeaux. Société de Géographie Commerciale,—Bulletin, No. 24 (1881), and No. 1 (1882).
 Calcutta. Original Meteorological Observations,—March 1881.
 ———. Results of Autographic Registration in 1880 at the Alipore Observatory.
 Cassel. Verein für Naturkunde,—Bericht, No. XXVIII.
 Leipzig. Deutsche morgenländische Gesellschaft,—Abhandlungen für die Kunde des Morgenlandes,—Vol. VIII, No. 1.
 ———. Hesperos,—Vol. I, Nos. 11-13.
 London. The Academy,—Nos. 502-505.
 ———. The Athenæum,—Nos. 2825-2828.
 ———. Geological Society,—Quarterly Journal, Vol. XXXVII, Part 4, and List of Fellows.
 ———. Institution of Civil Engineers,—Minutes of Proceedings, Vol. LXVI.
 ———. ———. Index to Vols. I-LVIII.
 ———. Institution of Mechanical Engineers,—Proceedings, No. 3, 1881.
 ———. Nature, Vol. XXV, Nos. 632-636.
 ———. Royal Astronomical Society,—Monthly Notices, Vol. XLI, No. 9.
 ———. Royal Geographical Society,—Proceedings, Vol. III, Nos. 11-12, November and December, 1881.
 ———. Royal Society,—Proceedings, Vol. XXXII, No. 215.

London. Society of Telegraph Engineers,—Journal, Vol. X, No. 38; and a Special Number.

———. Statistical Society,—Journal, Vol. XLIV, Part 3, Sept. 1881.

Moscow. Société Impériale des Naturalistes,—Bulletin, No. 1, 1881.

Munich. Repertorium für Experimental-Physik,—Vol. XVIII, No. 2.

New Haven. American Oriental Society,—Proceedings, October 1881.

Paris. Société d'Anthropologie,—Bulletin, Vol. IV, Part 2, February to May, 1881.

———. Journal Asiatique,—Vol. XVIII, No. 2, August to September, 1881.

———. Société de Géographie,—Bulletin, May, 1881.

Rome. R. Accademia dei Lincei,—Atti, Vol. VI, Part 2.

Trieste. Società Adriatica di Scienze Naturali,—Bollettino, Vol. V, No. 2.

Turin. Reale Accademia delle Scienze,—Atti, Vol. XVI, No. 7.

Washington. United States Geological Survey,—First Annual Report.

Yokohama. Deutsche Gesellschaft für Natur und Völkerkunde Ostasiens,—Mittheilungen, Heft XXV, December 1881.

BOOKS AND PAMPHLETS,

presented by the Authors.

BOEHTLINGK, OTTO. Sanskrit-Wörterbuch in kürzerer Fassung. Part III. 4to. St. Petersburg, 1881.

TEMPLE, LIEUT. R. C. The Sassî Punân of Hâshim Shâh. 3 Parts. 8vo. Pam.

MISCELLANEOUS PRESENTATIONS.

Report on the Administration of Bengal, 1880-81. 8vo. Calcutta, 1881.

General Report on Public Instruction in Bengal for 1880-81. Fcp. Calcutta, 1881.

BENGAL GOVERNMENT.

Report on the Administration of the Land Revenue Department of the Central Provinces for the revenue year 1880-81. Fcp. Nagpur, 1882.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

A Selection from the Illustrations which have appeared in "The Oudh Punch" from 1877-81. With an Introduction, Explanatory Notes to each plate, and a Postface, all in English. Fcp. Lucknow, 1881.

A. CONSTABLE, Esq.

ARBUTHNOT, SIR ALEX. J. Major-General Sir Thomas Munro, Bart., K. C. B., Governor of Madras. Selections from his Minutes and other Official Writings. 2 Vols. 8vo. London, 1881.

HUNTER, W. W. The Imperial Gazetteer of India. Vols. I—IX. 8vo. London, 1881.

The Indian Antiquary, Vol. X, Parts 126-127, December 1881.

HOME DEPARTMENT.

DUKA, DR. THEODORE. Emlékbeszéd William Stephen Atkinson külső tagfelett. 8vo. Buda Pest, 1881. Pam.

DR. RÁJENDRALÁLA MITRA.

General Report on the Operations of the Marine Survey of India for the year 1880-81. Fep. Calcutta, 1882.

SUPERINTENDENT, MARINE SURVEY OF INDIA.

Verhandlungen des Fünften Internationalen Orientalisten Congresses gehalten zu Berlin im September 1881. Theil I. 8vo. Berlin, 1881.

THE COMMITTEE.

The same.

DR. A. WEBER.

PERIODICALS PURCHASED.

Benares. Fallon's New English-Hindustani Dictionary,—Part VI.

Berlin. Deutsche Litteraturzeitung,—Nos. 42-48 and 51.

Calcutta. Calcutta Review,—Vol. LXXIV, No. 147, January 1882.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. VI, No. 12.

Göttingen. Gelehrte Anzeigen,—Nos. 49 and 50 (1881); and No. 1 (1882):

——. Nachrichten,—No. 15.

Leipzig. Annalen der Physik und Chemie,—Vol. XIV, No. 4.

——. Botanisches Centralblatt,—Vol. VIII, Nos. 2-8.

——. Literarisches Centralblatt,—Nos. 42-48, October to November, 1881.

London. Annals and Magazine of Natural History,—Vol. VIII, Nos. 47-48, November and December, 1881.

——. Chemical News,—Vol. XLIV, Nos. 1151-1153; and Vol. XLV, No. 1154.

——. Entomologist,—Vol. XIV, Nos. 222-223.

——. Entomologist's Monthly Magazine,—Vol. XVIII, Nos. 210-211.

——. Journal of Botany,—Vol. X, Nos. 227-228, November and December, 1881.

——. Journal of Science,—Vol. III, Nos. 95 and 96, November and December, 1881.

——. London, Edinburgh and Dublin Philosophical Magazine,—Vol. XII, Nos. 76 and 77, November and December, 1881.

——. Messenger of Mathematics,—Vol. XI, Nos. 6 and 7.

——. Nineteenth Century,—Vol. X, Nos. 57 and 58.

——. Publishers' Circular,—Vol. XLIV, No. 1061-1063.

- London. Quarterly Review,—Vol. CLII, No. 304, October 1881.
 ———. Society of Arts,—Journal, Vol. XXX, Nos. 1517-1519.
 ———. The Ibis,—Vol. V, No. 20, October 1881.
 New Haven. American Journal of Science,—Vol. XXII, Nos. 130-131,
 October and November, 1881.
 Paris. Comptes Rendus,—Vol. XCIII, Nos. 23-26, and Index to Vol.
 XCII.
 ———. Journal des Savants,—December 1881.
 ———. Revue Critique,—Vol. XII, Nos. 50-52.
 ———. Revue des deux Mondes,—Vol. XLVIII, No. 4; Vol. XLIX,
 No. 1.
 ———. Revue Scientifique,—Vol. XXVIII, Nos. 25-27; and Vol.
 XXIX, No. 1.
 Philadelphia. Tryon's Manual of Conchology,—Vol. III, Part 12.

BOOKS PURCHASED.

- Encyclopædia Britannica. Vol. XIII. 4to. Edinburgh, 1881.
 SPENCER, HERBERT. Descriptive Sociology; or Groups of Sociological
 Facts. No. 8. French. Compiled and abstracted by James Collier. Fol.
 London, 1881.
 STEWART, A., and LONG, G. Plutarch's Lives. Vol. III. 8vo. London,
 1881.
-

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR MARCH, 1882.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st March, at 9 P. M.

THE HON'BLE H. J. REYNOLDS, B. A., C. S., Vice-President, in the Chair.

The minutes of the last Meeting were read and confirmed.

The following presentations were announced:—

1. From the Public Museum, Buenos Aires, *Atlas de la Description Physique de la République Argentine. Section I, Vues Pittoresques.*

2. From the authors,—(1) *Ancient India as described by Ktésias the Knidian*, by J. W. McCrindle; (2) *Jāwedān i Khirad, and Izhār i Ihqāq ul Haq*, by Mahammad Hussain.

3. From the Home Department,—(1) *Supplément aux Dictionnaires Arabes*, Parts 1—8, by R. Dozy; (2) *An Arabic-English Lexicon*, derived from the best and the most copious Eastern Sources, Book I, Parts 1—6, by E. W. Lane; (3) *Lane's Arabic-English Lexicon*, edited by Stanley Lane Poole, Vol. VII, Fasc. I; (4) *A Tibetan-English Dictionary*, by H. A. Jäschke.

4. From G. Nevill, Esq.,—(1) *Das Klima von Süd-Afrika mit besonderer Rücksicht auf die Culturfähigkeit des Landes*, by Dr. Gustav Fritsch; (2) *Inscriptions Romaines de Vence (Alpes Maritimes)*, by J. R. Bourguignat.

5. From Paolo Mantegazza, President of the Anthropological and Ethnological Society of Florence,—(1) *Studi Antropologici sui Lapponi*, by Paolo Mantegazza and Stephen Sommer; (2) *La riforma craniologica*; (3) *Il terzo molare nelle razze umane*; (4) *Saggio sulla trasformazione delle forze psichiche*; (5) *Della capacità delle fosse nasali e degli indici rinocefalico e cerebrofaciale nel cranio umano*; (6) *Dei caratteri gerarchici del cranio umano*; (7) *Experimentelle Untersuchungen über den Ursprung*

des Faserstoffs und über die Ursache der Blutgerinnung, by Paolo Mantegazza; (8) Alcune osservazioni sull'epoca relativa della saldatura dei frontali in diversi mammiferi; (9) Sul rapporto fra la massima larghezza del cranio e della faccia; (10) Sulle cause delle anomalie di numero delle vertebre, by Ettore Regalia; (11) Nuovi studi craniologici sulla Nuova Guinea, by Paolo Mantegazza and Ettore Regalia.

6. From A. Simson, Esq.,—6 Silver Coins from Waga Serra Estate, near Chandragona, Chittagong Hill Tracts, and a minute gold coin found near Ganjam.

7. From the Hon'ble J. Gibbs,—12 modern Persian silver coins and 5 coins of the Andhrabhritya Dynasty.

8. From the Marine Survey Department,—List of Light-houses and Light-vessels in British India, including the Red Sea and Coast of Arabia (Suez to Singapore), corrected up to 1st January, 1882; and Charts of (1) the Indian Ocean, and (2) the Port of Maulmain.

The following gentlemen duly proposed and seconded at the last meeting were ballotted for and elected Ordinary Members:—

Syed Amir Hussain Khan, Bahadur.

P. Kennedy, Esq., M. A.

J. M. Douie, Esq., C. S.

The following gentlemen have intimated their desire to withdraw from the Society:—

Hon'ble Whitley Stokes.

Major W. R. M. Holroyd.

J. Blackburn, Esq.

Hon'ble J. B. Knight.

The CHAIRMAN announced that as only 14 Members of Council had been elected at the last meeting, the Council had elected Mr. A. Pedler to fill the vacancy, subject to the confirmation of the Society. The election was confirmed.

The SECRETARY read the names of the following gentlemen appointed by the Council to serve on the several Committees during the ensuing year:

Finance Committee.

Dr. Rájendralála Mitra.

J. Westland, Esq.

H. B. Medlicott, Esq.

A. Pedler, Esq.

R. Logan, Esq.

Library Committee.

Dr. Rájendralála Mitra.
H. B. Medlicott, Esq.
Col. J. F. Tennant.
Dr. D. D. Cunningham.
A. W. Croft, Esq.
Babu Prannath Pandit.
H. F. Blanford, Esq.
Dr. O. Feistmantel.
Major J. Waterhouse.
Dr. D. Waldie.
Dr. Mohendralal Sircar.
Babu Pratapa Chandra Ghosha.

Philological Committee.

Dr. Rájendralála Mitra.
Hon'ble J. Gibbs.
Major-General A. Cunningham.
J. Beames, Esq.
F. S. Growse, Esq.
Rev. K. M. Banerjca.
Dr. Mohendralal Sircar.
Dr. G. Thibaut.
C. J. Lyall, Esq.
G. A. Grierson, Esq.
H. Rivett-Carnac, Esq.
Nawab Abdul Latif Khan, Bahadur.
Moulvie Kabiruddin Ahmad.
Babu Prannath Pandit.
Babu Protapa Chandra Ghosha.
Major H. S. Jarrett.
A. M. Nash, Esq.
Wm Swinhoe, Esq.
Hon'ble Syad Amir Ali.
Hon'ble J. O'Kinealy.

Natural History Committee.

Dr. O. Feistmantel.
A. O. Hume, Esq.
Dr J. Anderson.
Dr. D. D. Cunningham.
Dr. G. King.

Dr. D. Brandis.
 S. E. Peal, Esq.
 R. Lydekker, Esq.
 Capt. G. F. L. Marshall
 W. T. Blanford, Esq.
 Dr. T. R. Lewis.
 H. B. Medlicott, Esq.
 R. D. Oldham, Esq.

Physical Science Committee.

H. B. Medlicott, Esq.
 Lieut.-Genl. J. T. Walker.
 H. F. Blanford, Esq.
 A. J. L. Cappel, Esq.
 A. Pedler, Esq.
 Col. J. F. Tennant.
 Commander A. D. Taylor.
 Major J. Waterhouse.
 F. Fedden, Esq.
 Dr. D. Waldie.

Coins Committee.

Dr. Rájendralála Mitra.
 Col. J. F. Tennant.
 Major-Genl. A. Cunningham.
 H. Rivett-Carnac, Esq.
 Hon'ble J. Gibbs.
 Major W. F. Prideaux.

The CHAIRMAN reported that Major J. Waterhouse was unable to spare the time for auditing the Society's accounts for 1881; and he appointed Mr. F. W. Peterson auditor in his place.

DR. A. F. R. HOERNLE read the following note by the Hon'ble J. Gibbs on five coins of the Andhrabhritya Dynasty, presented by him to the Society.

"Coins of the *Andhrabhritya* Dynasty.

See Bom. Br. R. A. Society's Proceedings, Vol. XIII, p. 303.

Indian Antiquary, Vol. VI, " 274.

" " IX, " 61.

"I beg to present to the Society some coins of the above dynasty. They were found close to Kolapore, the capital of the State of that name, in the

Southern Mahratta country: they consist of two descriptions, lead and copper, the former small, the latter large.

The list of kings is as follows:

1. Gotami putasa I, cir. A. D. 135.
2. Vasitho "
3. Maduri "
4. Gotami " II.

All that is known of them will be found in the references at the head of this note.

"I regret I have no spare coin of No. 2, Vasitha-putasa, but there were fewer found of this king.

"They are curious coins and may be acceptable to the Society.

"I have placed the names in the order in which Pandit Bhugwunlal Indragi puts them and the date of Gotami putasa I, 135 A. D., is that assigned by him. There were no coins found belonging to this first king."

The following papers were read—

1. *Notes on the Anatomy of the Scorpion-spiders* (Thelyphonus). *Part I The Scent-glands.*—By J. WOOD-MASON.

(Abstract.)

The remarkable Arachnidan genus *Thelyphonus* is confined in its distribution to South America and Southern Asia and their islands. Of its internal anatomy nothing but the nervous system is known. The French zoologist Lucas states that the *Thelyphoni* are called *Vinaigriers* by the inhabitants of Martinique on account of the strong vinegary odour which they emit when touched or handled. Stoliczka, who examined living specimens of one of the Indian species, states that a peculiar but *inodorous* fluid issues from two internal pyloric (!) appendages. These Arachnides, according to Lucas, live in damp places under stones on the ground. Stoliczka and Mr. Peal found them beneath the bark of decayed trees in groups. The author of the present paper was only able to obtain specimens for dissection during the heaviest rain, when all vegetation and the ground is saturated with water, and the animals come forth from their holes in the rocks, and he had found that death quickly followed their removal from their humid haunts, air saturated with moisture being apparently necessary for the due performance of their respiratory functions. All the specimens he had met with emitted, when touched, a most powerful and lasting odour exactly like that of a highly concentrated essence of pears, but which when deeply inspired had all the characteristic smell and pungency of strong acetic acid. This odour did not emanate from the general surface of the body, but proceeded from a pellucid fluid which exudes from the neighbourhood of the anus and is secreted by special glands. These are paired

and tubular organs of huge size, extending from the 19th somite of the body (on which they open by two minute valvular apertures placed at the sides of the anus) to the front end of the 13th in the male, but to the middle of the 11th in the female (whose glands are consequently the larger), and being, with the exception of the voluminous liver, the most conspicuous of the viscera. They are two subpellucid bags shaped somewhat like an Indian club, striped longitudinally with white, and filled to distension with a thin and clear fluid. They are not quite equal nor are they placed symmetrically in the body-cavity, but the one or the other lies between the nervous chain and the ventral body wall in the middle line between the two rows of vertical muscles, and the other between the row of muscles and the lateral wall of the side of the body to which it properly belongs. They apparently consist of a strong and structureless basement membrane invested externally by a layer of delicate striped muscular fibres arranged circularly and of an inner membrane; the walls of the short (1 mm. long) ducts are transversely thickened so as to resemble the tracheae of insects; the glandular tissue is arranged between the two membranes in longitudinal plaited stripes so as to permit of the expansion of the lumen of the tubular organ into a receptacle or bladder for the storing up for use of the secreted fluid, to which apparent arrangement of the glandular substance the striped appearance of the organs is due.

The secretion doubtless serves to protect the animals from attack, and it is interesting to find that the female in this, as in so many other animals which are similarly protected by their offensive odour, is, as being for obvious reasons the more important sex, more perfectly protected than the male by having, not indeed, so far as could be detected, a stronger and ranker, and therefore more disagreeable scent, as in many insects, but larger scent-secreting glands. Another point of interest brought out by this investigation is that the two glands exhibit a tendency to coalesce and form a single unpaired median organ, the two being always unequal and occasionally partially united and the one in the middle line invariably the larger.

These structures seem to belong rather to the category of excretory organs than to be highly developed skin-glands; and they are probably homologous with the silk-glands of other Arachnida and of Insects, with the green-gland of the Crayfish, and with the segmental organs of Worms and Peripatus.

2. *On the Structure of the 'Foot' in certain Terrestrial Gasteropoda.*—
By J. WOOD-MASON.

(Abstract.)

In this paper the author describes the structure of the part of the foot called by German writers on Malacology the 'Fusssaum,' which, as no

technical name for it appears to exist in the English language, he proposes to call the *peripodium* in allusion to its relation of position to the locomotor ventral surface or foot of the mollusks possessing it, but which he thinks may be homologous with the lateral folds (epipodia) of many marine mollusks (*Haliotis*, e. g.) Very frequently the peripodium is provided at its posterior extremity with a capacious pit, the capacity of which may be increased by the prolongation upwards of its anterior margin in the form of a horn, which not being specially sensitive is not a tentacle; often it is without this terminal pit; it is invariably richly ciliated throughout from the mouth on one side round to the mouth again on the other side dorsally; equally invariably is it limited off from the side of the body (and very frequently also from the muscular foot) by a peripheral groove, which deepens anteriorly. Its office is to assist in lubricating the foot, the pit when present receiving the effete lubricating fluid and throwing it off in gelatinous lumps.

The foot-gland, as is well known, pours out its abundant and constantly flowing secretion through an aperture which is situated below and a little behind the mouth into a hollow whence it naturally fall into the deep anterior end of the dorsal peripheral groove, whence again it is carried by the cilia with which the surface of the peripodium is beset (being distributed to the foot as it goes) to the terminal pit. In those forms in which this pit does not exist, the secretion that has subserved lubrication is merely left behind by the crawling mollusk.

As Pulmonata possessing a ciliated peripodium with and without a terminal pit were to be found in every quarter of the globe, and as it was in the highest degree improbable that so highly specialized a structure subserving such an important purpose in the animal economy as this evidently did had arisen independently many times in many different forms in many widely separated areas of the earth's surface, he considered that it had a higher taxonomic value than had hitherto been assigned to it, and he felt strongly inclined to distinguish those forms that possessed it and those that did not (or had lost it) from one another by calling them CRASPEDOPHORA and LIPOCRASPEDA respectively.

Order PULMONATA.

Suborder STYLOMMATOPHORA.

CRASPEDOPHORA.

Peripodial pit present.

| | | |
|---------------------|----------------------|--------------------|
| <i>Arion.</i> | <i>Nanina.</i> | <i>Macroceras.</i> |
| <i>Geomalacus.</i> | <i>Microcystis.</i> | <i>Xesta.</i> |
| <i>Dendrolimax.</i> | <i>Macrochlamys.</i> | <i>Rhysota.</i> |
| <i>Cryptosoma.</i> | <i>Situla.</i> | <i>Ventridens.</i> |

| | | |
|------------------------|--------------------|----------------------------------|
| <i>Austenia.</i> | <i>Ariophanta.</i> | ? <i>Thalassia.</i> |
| <i>Tennentia.</i> | <i>Rotula.</i> | <i>Sesara.</i> |
| <i>Parmarion.</i> | <i>Euplecta.</i> | <i>Durgella.</i> |
| <i>Girasia.</i> | <i>Eurypus.</i> | <i>Odontoprion (succineus).</i> |
| ' <i>Helicarion.</i> ' | <i>Martensia.</i> | ? <i>Caldwellia (philyrina).</i> |
| | | <i>Ferussacia (pars)</i> ; &c. |

Peripodial pit absent.

| | | |
|--------------------|----------------------|-----------------------------------|
| <i>Limax.</i> | <i>Vitrinopsis.</i> | <i>Gastrodonta.</i> |
| <i>Oopelta.</i> | <i>Vitrinoconus.</i> | <i>Trochomorpha.</i> |
| <i>Parmacella.</i> | <i>Vitrina.</i> | <i>Plectopylis (plectostoma).</i> |
| <i>Anadenus.</i> | <i>Hyalina.</i> | <i>Videna, &c.</i> |
| <i>Philomycus.</i> | | |

LIPOCRASPEDA.

Family HELICIDÆ.

| | | |
|------------------------|-----------------------|---------------------------|
| <i>Hyalimax.</i> | ? <i>Caldwellia</i> | <i>Helix</i> et subgen. |
| <i>Omalonyx.</i> | (<i>philyrina</i>). | <i>Achatina.</i> |
| <i>Simulopsis.</i> | <i>Bulimulus</i> | <i>Bulimus.</i> |
| <i>Pellicula.</i> | <i>Pupa.</i> | <i>Cochlostyla.</i> |
| <i>Lithotis.</i> | <i>Clausilia.</i> | <i>Glossula.</i> |
| <i>Succinea.</i> | <i>Zua</i> | <i>Hadra.</i> |
| <i>Janella.</i> | | <i>Orthalicus.</i> |
| <i>Athoracophorus.</i> | | <i>Macroceramus</i> ; &c. |
| <i>Aneitea.</i> | | |
| <i>Triboniophorus.</i> | | |

Family TESTACELLIDÆ.

| | |
|--------------------------|------------------------|
| <i>Testacella.</i> | <i>Streptaxis.</i> |
| <i>Daudebardia.</i> | <i>Ennea.</i> |
| <i>Strebelia.</i> | <i>Streptostele.</i> |
| <i>Glandina.</i> | <i>Elma.</i> |
| <i>Oleacina, &c.</i> | <i>Cœliaxis.</i> |
| | <i>Gibbus, &c.</i> |

Family VAGINULIDÆ.

Vaginulus. Veronicella.

3. *Remarks on a Nematoid Hæmatozoon discovered by Dr. Griffith Evans in a Camel.*—By SURGEON-MAJOR T. R. LEWIS, M. B.

Dr. Lewis observed that the occasional presence of nematoid organisms in the blood of various animals had long been ascertained, and that it would be known to some of the members that, about ten years ago, he had drawn attention to the fact that in India a somewhat similar condition was observable in man, and that this condition was associated with certain forms of grave disease. Since this period the literature of the subject had very rapidly increased and numerous confirmatory observations had been made in various parts of the world. Our knowledge of the hæmatozoa of lower animals had also been very greatly extended during the same period and of recent observations of this kind the most important which he knew of was one which had been made by Dr. Griffith Evans, the present head of the Veterinary Department in Madras, who, whilst making a post-mortem examination of a camel at Dera Ismail Khan, in October 1880, found that the blood of the animal swarmed with the brood of a nematoid parasite resembling the hæmatozoon found in man. Dr. Evans found, further, that the parental form existed in the lungs, the pulmonary arteries of which were plugged by tangled masses of the thread-like parasites. They were also found in the mesentery. A comparison of these hæmatozoa with those found in man shows that whereas the embryonal forms of both kinds are indistinguishable under the microscope, nevertheless the mature form as met with in the camel differs, both as to size and structure, from the only male and female specimen of the mature form met with in man which has hitherto been obtained in India, and so far as the speaker was aware this hæmatozoon of the camel differs from any hitherto described parasite. Should further enquiry confirm the supposition that the parasite is new to science he proposed that it should be called *Filaria Evansi*.

Dr. Lewis submitted mature specimens of the *Filaria Evansi* and of the *Filaria sanguinis-hominis* to the meeting, as well as samples of the microscopic embryos of both kinds; and furnished the following preliminary description of the mature hæmatozoon of the camel.

FILARIA EVANSI, sp. nov.

The *male* measures from 3" to 4½" in length and from $\frac{1}{10}$ " to $\frac{1}{8}$ " transversely at the widest part. At the oral end the width is about $\frac{1}{10}$ " and about one-third of an inch lower down the width equals $\frac{1}{8}$ ". The tail tapers to a blunt point and is curled into two or three coils. There are two spicules; the longer measures $\frac{1}{8}$ " and the shorter $\frac{1}{10}$ ". The cloaca is situated at $\frac{1}{12}$ " from the end of the tail. The bursa is small and is characterised by four pairs of pre-anal and two pairs of post-anal papillæ, with a fifth post-anal papilla close to the tip of the tail. The mouth does

not manifest any well marked lips. The œsophagus is $\frac{1}{4}$ " long by about $\frac{1}{100}$ " wide; and the cæcal commencement of the sperm tube may, in well prepared specimens, be detected lying near the junction of the œsophagus and the intestine. The sperm tube measures about $\frac{1}{100}$ " transversely, and the intestinal canal about $\frac{1}{100}$ "—both measurements being made towards the middle of the body of the worm.

The *female* is, speaking generally, about double the size of the male. It is from 6" to 8" long and from $\frac{1}{10}$ " to $\frac{1}{8}$ " across, at the widest part. The mouth is simple and somewhat pointed, the width of the parasite at this part averaging $\frac{3}{16}$ ". The tail is blunt—terminating in a slightly clubbed or funnel shaped enlargement; its width at the extreme end averages $\frac{1}{16}$ ", but a little higher up its diameter is somewhat less— $\frac{1}{20}$ ". The œsophagus averages .3" in length and $\frac{1}{100}$ " in width, and the intestine about $\frac{1}{10}$ ". The anus terminates at a spot about $\frac{1}{100}$ " from the caudal end. The genital orifice is about $\frac{1}{10}$ " from the mouth. For about a quarter of an inch from the orifice the genital tube presents nearly the same diameter, *viz.*, about $\frac{1}{100}$ ", and then it rapidly widens to $\frac{1}{10}$ " and subdivides into two utero-ovarian tubules, each measuring $\frac{1}{100}$ " transversely. The tubules are generally packed with embryos averaging $\frac{1}{16}$ " in length by $\frac{1}{100}$ " in width. Lower down, ova, in various stages of differentiation, and embryos are mixed together.

The specimens examined had been for a short time in spirit; they were of a yellowish-white appearance and female specimens more numerous than males. There was no marked difference as to firmness of texture between them. A fuller description of the minute anatomy of the parasites has been prepared and is nearly ready for publication.

4. *Arab Voyages to India in the Ninth Century.*—By E. THOMAS.

This paper will be published in the Journal, Part I.

5. *Notes on the Singpho and Kampti country, North-Eastern Frontier.*—By CHAS. H. LEPPER, F. R. G. S., M. R. A. S. (vide Map.)

General Walker has desired me to write a short paper on the tract of country beyond our extreme North-Eastern Frontier, the tract between us and China, about which so little is known, in fact I may almost say about which nothing more is known than was brought to light by Wilcox more than fifty years ago. Even that indomitable and admirably correct explorer had to leave a strip of country between us and China totally unvisited and unreported upon. Having in those days to start from a point much further within our frontier than would be necessary now-a-days, he and his party were tired out and at the end of their energies and supplies before getting more than half-way between our present frontier and China, and felt obliged to return. Since his time we have got, literally speaking,

no further in our knowledge of the country beyond our frontier. In the seventeenth century we had a factory at old Bhamo, a few miles to the east of present Bhamo, and it is only natural to suppose that the Europeans then residing at old Bhamo knew at least as much if not more of the country north and west of their settlement than we do now.

For many years I have been occupying my leisure by collecting all the information I could of this exceedingly interesting tract, and have frequently made little excursions across the frontier. But this last cold season I had the great good fortune of having as my companion a gentleman whose name from political reasons I am not permitted to mention, but whom you will immediately recognize under the initials A. D. Having in him all the information extant on the China side of this tract I was able to ask the people we met such questions as would tend towards obtaining correct information, as we thus had the means of checking some of the statements made us.

To take up the geographical points first, I will condense into as few words as possible the most important details we collected. We knew from Wilcox's account, which we had with us for reference, the country up to Manchi and the Nam Kin branch of the Irrawaddi. To fix this extreme point of our knowledge from the west, I had better state that Wilcox gives from "several observations" the latitude of Manchi (it should be spelt Mán Khi) as $27^{\circ} 29' 16'' \cdot 5$: he does not give its longitude unfortunately. The latitude of Sadiya, our present outpost, is I believe given as $27^{\circ} 49' 44''$ and longitude $95^{\circ} 43' 6''$. We may take then Mán Khi as roughly speaking about $20'$ to the south and 2° to the east of Sadiya. On Wilcox's map of his trip is traced the upper portion of a river to the east of the Nam Kin and running for some distance almost parallel to the Nam Kin *viz.*, north and south. He marks this the Nam Disang (nam = river in Kampti as in Siamese, sometimes menam): we heard it also called the Khan Kha (kha = river in Singpho) by the Singphos. This river was described to us from drawings on the sand as joining the Nam Kin by taking a somewhat sudden bend at no great distance below the entry of the Sit Kha into the Nam Kin. Between these two rivers, and north of the latitude of Mán Khi, live the Khannungs, a distinct people, very quiet, and rather skilful workers in metal: these are the makers of the best Kampti daos. Below these and still between the two rivers Nam Kin and Khan Kha or Nam Disang is the Dooling clan of Singphos, belonging to the Kaku division of Singphos.

In one of Wilson's maps, again, a trace of which I have, he shows a short trace of a river to the north east of Mán Khi and beyond the Khan Kha or Nam Disang. On another map published in 1828 by Wilcox I see he has, from hearsay or by guess, prolonged this little bit down till it joins

the Irrawaddi a little above the 25th parallel of latitude, and calls it the Shoomaee. In his letter-press he gives its different names as being Shumai Kha, Pongmai, or Sinmai Kha. I heard it called Phongmai by the Singphos, Nam Kin lung (big Nam Kin by the Kamptis) and in an old map published at the Surveyor General's Office I see it called the Seng Kha. Now this latter name is important, perhaps, as it bears a significant resemblance to the Song nga Kin of Tibet. The Song nga Kin in Tibet passes the village of Song nga kin Dzong, which is somewhere on or about $28^{\circ}30'$ of latitude, and runs in a direction which leads one again to suppose that the Song nga Kin and the Seng Kha are one, apart from the resemblance of name. Then again the Seng Kha or Phongmai, or Shumai or Sinmai, having been described to us as the Nam Kin lung, *i. e.*, the big Nam Kin, points to its being bigger than the Nam Kin, at the same latitude as Man Khi, *i. e.*, before the latter had received the waters of the Nam Lang, and Sit Kha, western tributaries, and the Khan Kha its eastern tributary. This would be quite consistent with its greater length and yet would be consistent with the statements of Major Sandeman's surveyor, who makes the eastern branch of the Irrawaddi above Maing na as smaller than the western, the western (*i. e.*, Nam Kin) having before this latter point received the tributaries Nam Lang and Sit Kha, and Khan Kha or Nam Disang.

Dr. Clements Williams put the junction of the two Nam Kins (let me so call them to speak in one language at a time) at a place called Mainla about 26° N. lat. This Mainla is evidently the Maing na of Major Sandeman's surveyor, which is given as 16 miles north of Kacho, and the latter place is given as latitude $25^{\circ}6'$. His "eastern branch" must be the Nam Kin Lung, as we know it cannot enter the Irrawaddi lower down, as the surveyor must have noticed its mouth, and it cannot have passed across Capt. Gill's route without his having entered it, unless it could be either the Shuó li, the Taping, or the Nampoung, which is not to be seriously considered.

If this reasoning be correct we must make the Khan Kha or Nam Disang join the Nam Kin shortly below the mouth of the Sit Kha, as there is no room for it much lower down, and this again quite agrees with the accounts I have brought back, and already stated above. The Nam Kin at about the latitude of Man Khi is not more than 80 yards wide and fordable even when swollen by the melting snows, according to Wilcox. The Khan Kha is said to be much the same size by the Singphos, but I have my doubts on that point.

I think we can now accept the Nam Kin lung or Phongmai Kha as the real source-stream of the Irrawaddi; and if the Song nga Kin and Seng Kha are one, then the Song nga Kin and our Nam Kin lung or Phongmai are therefore one: in that case the Irrawaddi rises in Tibet above the 30° of N. latitude, and I think we may claim this as a reasonable solution of the Irrawaddi problem.

Let me next take up the people inhabiting this tract. Between these two important streams the Nam Kin and the Phongmai or Nam Kin lung, or may I say the Irrawaddi "proper," and from their junction to about the latitude of the junction of the Sit Kha with the Nam Kin are the Laphais a Singpho clan, represented to me as being quiet people and "zemindars," i. e., probably cultivators: they also extend east of the Irrawaddi "proper" to the mountains bordering quasi Chinese territory, i. e., to the country inhabited by the Latongs, also a Singpho clan, which from enquiries we are able to recognize as the Lissous of our best authority on the country on the Chinese side viz., A. D. We therefore meet China on known ground here.

North of the Laphais and between the Nam Kin and the Irrawaddi "proper" are the π Kumsangs another Singpho clan. These extend again east as far as the Latongs or Lissous. We meet China here again. North of the π Kumsangs, and between the Nam Kin and Irrawaddi "proper" are the Murans, another Singpho clan, but these do not, it is said, pass the Irrawaddi "proper" to its east.

These Murans are interesting as being the parent stock of the Muran or Muttucks of the Laekimpur District of Assam, and are said to be a section of the Loosoo or Lissou clan of A. D., but this dates from 800 years ago. The word "Muttuck" signifies "capable of resistance," and was given them by the Kamptis and Singphos in contradistinction to the other Assamese who were termed Mooloons, and who were taken as slaves. The equivalents for "Muttuck" and "Mooloon" are given as "sukut" and "nurum." They are now, these same Muttucks, probably the most effete and slothful people in existence.

North of the Murans and still between the Nam Kin and the Irrawaddi "proper," at the foot of the Himalayas and about the eastern source of the Khan Kha or Nam Disang, are the Maruv, a distinct tribe, who are described as a quiet inoffensive people. They must be a very small body judging from the space allowed them. They are said not to pass the Khan Kha or Nam Disang to the west, nor the Irrawaddi "proper" to the east.

Coming back to the country north of the π Kumsangs, on the east bank of the Irrawaddi "proper," we have the Mussu Tehi Keyt clan of Singphos, and east of these again the Dainu Tribe, a distinct people. These are on the western slope of the range of mountains bordering the Lutze Tribe of A. D. We therefore meet China again here. But between the Mussu Tehi Keyt clan and the Dainu Tribe in the Terai there is the Dgi Tribe and these extend north up into the Hills. Possibly these may be the Didju Tribe of A. D., as they are about where he places that tribe, though on this point I have only the similarity in name and situation to go upon.

Thus from the Thibetan Frontier in the north down to already described country in the south we have now been able to fill in the clans and tribes between our frontier and China, and of these it is satisfactory to learn that the majority are described as very quiet people, and those, *viz.*, the Lissus, who are from native sources described as the worst, are described by A. D. as being well disposed to Europeans, though subject enough to disputes amongst themselves.

It is seen from the above what a very small area is allotted to the Kamptis of Bor Kampti visited by Wilcox over 50 years ago. They may be said to be contained in the basin between the Nam Lang and the Nam Kin, a few detached villages being found scattered along the river banks, a little to the north of Kachio, by Major Sandeman's surveyor.

The clan of Kamptis that was in power in Wilcox's time in Bor Kampti, *viz.* the Lung Kins, have been expelled by the other Kampti clan called Luk Khun, and their town Kallang of Wilcox's map destroyed. Of those that escaped of the Lung Kins some went south down the Nam Kin, others are settled along the Tenga Pani, and near the mouth of the Noa Debing in our territory. This exodus occurred about 30 years ago. They left none of their clan behind them except the orphans of the slain that were too young to march. There are several khéls or small clans amongst the Kamptis. These Kamptis in our territory have still a greater respect for Burmah than for us, and imagine Burmah stronger than we are. I met two Burmese, I firmly believe officials, amongst them. They send presents to the Burmese kings, having to send them through British country to do so. The Kamptis of Bor Kampti also send presents as tribute once in about three years to Burmah.

Looking at the Kamptis from a China route point of view they can be perfectly ignored by passing to the south and round them. In any case they would do nothing but offer passive resistance. But as, owing to the jealousies existing between the Kamptis and Singphos, it would be impolitic to have a mixed following of Kampti and Singpho guides, and as Kampti guides alone could not lead an explorer to China, and Singpho guides properly selected from the different Singpho clans could do so, it is easily seen of how little importance to us any kind of feeling towards us on the part of the Kamptis need be.

The Kampti language is undoubtedly a patois of Siamese as is easily detected by a glance at a comparative vocabulary. They use characters almost identical in general appearance with those of Burmah, but having a difference in value and pronunciation. As regards the Singpho language, this seems, after a comparison I have made with some 14 languages of these parts (vocabularies of which I have already collected, with hopes of adding some 14 to 16 more to their number), to be a distinct language. It is

true I can find words quite similar and of the same meaning in several of the other frontier languages, but these few are so very rare out of a good number, that they can only be called coincidences, and they tend to make the differences all the more marked. There is one coincidence, however, of sufficient interest to mention, *viz.*, the word for the numeral *five*; this in Singpho is mungar, in Manipuri is munga, in Kuki Lushai is punga, in Angami Naga is pengu.

Both the Kamptis and Singphos belong to the Thibeto-Burmah non-Aryan division.

There has possibly been too great a tendency to mark down new languages on this frontier amongst philologists, and from a letter I have just received from Mr. Sam. Peal I find he is of the same opinion as myself. I cannot do better than quote his letter which explains the case admirably in a few words; he says "I may tell you at once, however, that there is no hard and fast boundary for the Naga dialects this side any more than for the Irish brogue at home; contiguous tribes (of Nagas) generally converse easily and it becomes more difficult with distance. The Philologists at home make this mistake. It is, however, not so much a dialectic variation as that actual words do change *radically* with the distance, the percentage increasing with it."

Of course here we only speak of languages belonging to individual races, which languages are subject to much change in themselves, sufficient to give rise to the error of classing them as distinct patois or languages instead of as blended patois.

The Singpho language is perfectly distinct from the Kampti or as we might call it that Siamese patois spoken by the Kamptis.

This Singpho language is not purely monosyllabic though nearly so and has no tones *à la Chinoise* so far as I have gone into it at present. The Kampti patois is on the other hand apparently monosyllabic and has got tones *à la Chinoise*.

The Singphos were originally all one people, but some time back split up into two great divisions, say the Eastern and the Western, called Kakus and Ts'Sans. This localisation, *viz.* Eastern and Western, is only fit for general application, as families and villages of either may be, and are frequently, found situated amongst families and villages of the other. Both have representative villages within our frontier.

These divisions are subdivided into clans, and the clans into families, and the families again into villages, till the whole appears indeed a difficult problem to work out when an attempt is made to localize and distinguish them all. What adds to the confusion is that in Assamese they only use the word *khél* to describe both the clan and the family. Perhaps the most important clan of the Ts'San Division is the Ga Kieng (called by

travellers in Burmah Ka Kynngs, &c., &c.) This clan is also called Dapha, from its having originally been located on the Dapha pani, a tributary of the Dehing a tributary again of the Brahmaputra within our frontier. Ga Kieng signifies red, and they are supposed to have got this name from the red colour of the soil near the Dapha: probably the red sandstone rocks about there gave the name.

This clan is of course again divided into a lot of families and villages. The Kaku Division again claims several large clans such as the Laphais, Latangs or Lissous and ^{the} Kumsangs, &c. The Kaku division is found chiefly in the trans Nam Kin country and the Ts'San division on this side of the Nam Kin, in the Hokong valley, and between the Irrawaddi and the Kandywen. *A propos* of the Lissous, although they actually pay tribute to China, *i. e.*, those of them immediately adjacent to China, they are not allowed at Pekin to be in existence, nor their name to appear on the Chinese maps, but this is an interesting detail which it would take too long to relate here.

The Singphos pay tribute to nobody, neither to Burmah nor to China, thus forming a neutral ground between us and China. All these tracts, especially towards the south and south-west and those in the further west of our frontier station Sadiya, are extremely rich in the precious metals, and the amber mines of Hokong, only a few days' journey from our frontier, are famous. Serpentine, jade, salt and other valuable minerals, as well as precious stones, are found in these tracts in no insignificant quantities. The Chinese come a long way towards us, in the country just below the junction of the Nam Kin and the Irrawaddi "proper," *i. e.*, on the neutral ground referred to, for trading purposes, and there used to be large settlements of them even on this side of the Irrawaddi. This seems to point very distinctly to the easy opening of trade communications with China on this neutral ground, seeing that the Singphos would welcome us gladly if properly treated in the first instance.

As regards our actual distance from the Chinese frontier, if we put the extreme point of our further line at about 70 miles east of Sadiya, then we cannot be more than 80 miles from the limit where Chinese influence commences or their "outer line" must be, which latter follows the range of mountains on the right bank of the Saluen or Loutze Kiang (river of the Loutzes). This 80 miles contains more of interest in itself than is easily explained in a short paper of this nature, but time and space do not allow me to deal, but in a most general way, with a subject that might fill volumes before being exhausted.

General WALKER remarked that, in the absence of actual survey operations, geographers had much reason to be indebted to gentlemen—as Mr. Lepper, and our friend A. D. to whom we are already indebted for previous

communications—who, while residing in the neighbourhood of any region which has not yet been explored by Europeans and is still a *terra incognita* to the world at large, devote themselves to enquiries regarding its inhabitants, their actual subdivisions, and the general run of the rivers and mountain ranges which separate them from each other and from the outer world. In this way the broad facts of the geography of the country become elicited even without actual survey.

The information now furnished by Mr Lepper and A. D. regarding the Singphu Kampti country and the regions between eastern Assam and western China tends to strengthen the probabilities in favour of the sources of the Irrawaddy river lying wholly in a system of mountain ranges on or about the parallel of 28°. On the other hand we have already learnt from A. D. that the Salwin river—which may be regarded as a sister to the Irrawaddy, the two flowing parallel to each other for a considerable distance, and eventually entering the same ocean—takes its rise in the great plateau of eastern Thibet, probably about the parallel of 32°, and very considerably to the north of the sources of the Irrawaddy. This is a fact of considerable geographical importance, of which we might long have remained in ignorance but for these communications.

- G. *On an abnormality in the horns of the Hog-deer, Hyelaphus porcinus, Zim, with a theory on the Evolution of Antlers in Ruminants.*—By JOHN COCKBURN.

(Abstract.)

The abnormality which was unilateral was described and attributed to reversion to an ancestor of both *Rusinae* and *Elaphinae*. The arguments for and against this decision were then discussed.

Mr. Cockburn alluded to Prof. Garrod's theory of development from a typical antler which might be described as a bifurcate beam with a brow antler at the basal portion.

The author regards this typical antler as already a complex organ, inasmuch as certain existing species of deer show a far more elementary type, *Cervulus* and *Coassus rufus* for example, the horns of the latter animal never proceeding beyond the condition of a simple spike.

The important fact that the antlers of all ruminants exhibit the elementary character of a simple spike in the first year's growth has caused the author to assume as a hypothesis that the development of the antlers of individual species of *Cervinae* is a recapitulation of the history of the development of antlers in the group. The details of the theory are then explained and Prof. Boyd Dawkin's latest researches alluded to.

LIBRARY.

The following additions have been made to the Library since the Meeting held in February last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,
presented by the respective Societies and Editors.

- Baltimore. American Chemical Journal,—Vol. III, No. 5.
 Bombay. The Indian Antiquary,—Vol. XI, Part 129, February 1882.
 Bordeaux. Société de Géographie Commerciale,—Bulletin, No. 2.
 Brunswick. Verein für Naturwissenschaft,—Jahresbericht, 1880-81.
 Calcutta. Geological Survey of India,—Memoirs, Palæontologia Indica, Series X, Vol. II, No. 1; and Series XIV, Vol. I, Part iii, No. 1.
 ———. Original Meteorological Observations,—April and May 1881.
 Leipzig. Hesperos,—Vol. I, No. 14.
 Liège. Société Géologique de Belgique,—Annales, Vol. VII.
 London. Nature,—Vol. XXV, Nos. 637-640.
 ———. Royal Astronomical Society,—Monthly Notices, Vol. XLII, No. 1, November 1881.
 ———. The Academy,—Nos. 506-509.
 ———. The Athenæum,—Nos. 2829-2832.
 Mozambique. Sociedade de Geographia,—Boletim, No. 6, November 1881.
 Munich. Repertorium für Experimental-Physik,—Vol. XVIII, No. 3.
 Pisa. Società Toscana di Scienze Naturali,—Atti, Processi Verbalì, 13th November 1881.
 Paris. Société de Géographie,—Bulletin, June and July 1881.
 Rome. R. Accademia dei Lincei,—Atti, Vol. VI, Part 3.
 ———. Società degli Spettroscopisti Italiani, Memorie, Vol. X, No. 11, November 1881.
 St. Petersburg. Hortus Petropolitanus,—Acta, Vol. VII, No. 2.
 Yokohama. Asiatic Society of Japan,—Transactions, Vol. XI, Part 3.
 Zagreb. Hrvatskoga Arkeologickoga Druztva,—Viestnik, Vol. IV, No. 1.

BOOKS AND PAMPHLETS,

presented by the Authors.

- McCRINDLE, J. W. Ancient India as described by Ktésias the Knidian. 12mo. Calcutta, 1882.

MISCELLANEOUS PRESENTATIONS.

- Report on the Trade and Resources of the Central Provinces for the year 1880-81. Fcp. Nagpur, 1882.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

DOZY, R. *Supplément aux Dictionnaires Arabes*. Vols. I-VIII. 4to. Leyde, 1877-80.

FALLON, S. W. *A New English-Hindustani Dictionary*. Parts 4, 6 and 7. 8vo. Benares, 1881-82.

Indian Antiquary, Vol. XI, Part 129, February 1882.

LANE, EDWARD WILLIAM. *An Arabic-English Lexicon*, derived from the best and the most copious Eastern Sources, in two books. Book I, Parts 1-6. 4to. London, 1863-77.

LANE'S Arabic-English Lexicon. Edited by Stanley Lane Poole. Vol. VII, fasc. 1. 4to. London, 1881.

JAESCHKE, H. A. *A Tibetan-English Dictionary with special reference to the prevailing dialects*. To which is added an *English-Tibetan Vocabulary*. 8vo. London, 1881.

HOME DEPARTMENT.

Annual Report of the Madras Medical College, Sessions 1880-81. Fcp. Madras, 1881.

Annual Report on the Lunatic Asylums in the Madras Presidency during the year 1880-81. Fcp. Madras, 1881.

MADRAS GOVERNMENT.

List of Light-houses and Light-vessels in British India, including the Red Sea and Coast of Arabia (Suez to Singapore), corrected up to 1st January, 1882. Obl. 4to. Calcutta, 1882.

General Report on the Operations of the Marine Survey of India, for the year 1880-81. Fcp. Calcutta, 1882.

MARINE SURVEY DEPARTMENT.

BURMEISTER, DR. H. *Atlas de la Description Physique de la République Argentine*. Section I. *Vues Pittoresques*. Fol. Buenos Aires, 1879.

MUSEO PUBLICO, BUENOS AIRES.

FRITSCH, DR. GUSTAV. *Das Klima von Süd-Afrika mit besonderer Rücksicht auf die Culturfähigkeit des Landes*. 8vo. Pamphlet.

BOURGUIGNAT, J. R. *Inscriptions Romaines de Vence (Alpes Maritimes)*. 8vo. Paris, 1869. Pamphlet.

G. NEVILL, Esq.

MANTEGAZZA, PAOLO. *Della capacità delle fosse nasali e degli indici rinocefalico e cerebrofaciale nel cranio umano*. 8vo. Firenze, 1873.

———. *Dei caratteri gerarchici del cranio umano*. 8vo. Firenze, 1875.

———. *Il terzo molare nelle razze umane*. 8vo. Firenze, 1878.

———. *La riforma craniologica*. 8vo. Firenze, 1880.

———. *Saggio sulla trasformazione delle forze psichiche*. 8vo. Pam.

———. *Experimentelle Untersuchungen über den Ursprung des Faserstoffs und über die Ursache der Blutgerinnung*. 8vo. Giessen.

MANTEGAZZA, PAOLO; and REGALIA, ETTORE. *Nuovi studi craniologici sulla Nuova Guinea*. 8vo. Firenze, 1881.

MANTEGAZZA, PAOLO; and SOMMIER, STEPHEN. *Studii Antropologici sui Lapponi*. 4to. Florence, 1880.

REGALIA, ETTORRE. *Alcune osservazioni sull'epoca relativa della saldatura dei frontali in diversi mammiferi*. 8vo.

———. *Sulle cause delle anomalie di numero delle vertebre*. 8vo. Firenze.

———. *Sul rapporto fra la massima larghezza del cranio e della faccia*. 8vo. Firenze.

PRESIDENT, ANTHROPOLOGICAL SOCIETY OF FLORENCE.

PERIODICALS PURCHASED.

Berlin. *Deutsche Litteraturzeitung*,—No. 49.

Calcutta. *Indian Medical Gazette*,—Vol. XVII, No. 2, February 1882.

Geneva. *Archives des Sciences Physiques et Naturelles*,—Vol. VII, No. 1.

Göttingen. *Gelehrte Anzeigen*,—Nos. 51-52 (1881); and No. 5 (1882).

———. *Nachrichten*,—No. 16.

Leipzig. *Annalen der Physik und Chemie*,—Vol. XV, No. 1.

———. *Beiblätter*,—Vol. V, No. 12; and Vol. VI, No. 1.

———. *Botanisches Centralblatt*,—Vol. VIII, No. 9.

———. *Literarisches Centralblatt*,—No. 49.

London. *Chemical News*,—Vol. XLV, Nos. 1155-1158.

———. *Publishers' Circular*,—Vol. XLV, Nos. 1064-1065.

———. *Quarterly Journal of Pure and Applied Mathematics*,—Vol. XVIII, No. 70, October 1881.

———. *Society of Arts*,—Journal, Vol. XXX, Nos. 1520-1524.

Paris. *Annales de Chimie et de Physique*,—Vol. XXIV, December 1881, and Vol. XXV, January 1882.

———. *Comptes Rendus*,—Vol. XCIV, Nos. 1-4.

———. *Revue Critique*,—Vol. XIII, Nos. 1-5.

———. *Revue des deux Mondes*,—Vol. XLVII, No. 3; and Vol. XLIX, Nos. 2-3.

———. *Revue Scientifique*,—Vol. XXIX, Nos. 2-4.

BOOKS PURCHASED.

GOULD, JOHN. *The Birds of New Guinea*. Part XII. Folio. London, 1881.

LUYS, J. *The Brain and its Functions*. 12mo. London, 1881.

MORSELLI, HENRY. *Suicide: an Essay on Comparative Moral Statistics*. 12mo. London, 1881.

THE SINGPHO-KAMPTI COUNTRY

or Neutral Ground between

INDIA AND CHINA

To illustrate a Paper read before the

ASIAN SOCIETY OF BENGAL,

1st March 1882.

By COL. H. LEPPER, F.R.G.S., -M.R.A.S.

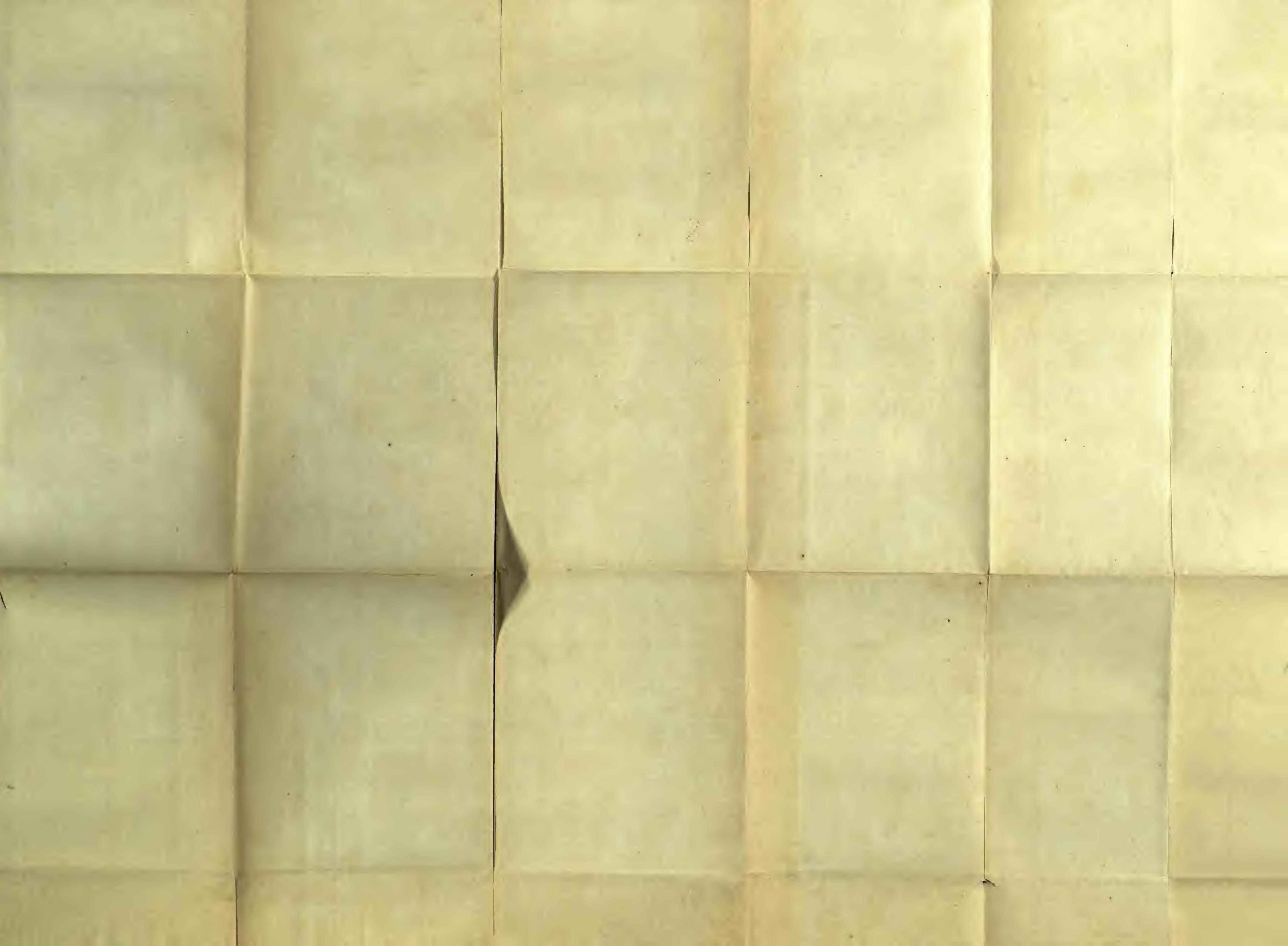
Scale 1 = 32 Miles or, 51,200 Yards

Table of Heights and Distances taken from Capt. G.H.'s Itinerary.

| Name | Altitude in feet (See text) | Distance in miles (See text) | Days Marching | Notes |
|---------------|-----------------------------------|------------------------------------|------------------|-------|
| Boma | 420 to Benda or Chao Te | 3944 | 5 | 371 |
| Sanda | 2944 to Benda | 2907 | 2 | 134 |
| Mamla | 3017 to Mowin or Tany Yuch Tany | 4189 | 2 | 356 |
| Mamla | 5192 to Shao Li River | 4503 | 1 | 144 |
| Shao Li River | 4502 to Sabin River | 2923 | 1 | 164 |
| Sabin River | 2240 to Tany Chang | 3641 | 1 | 38 |
| Tany Chang | 5645 to Makong River | 3023 | 1 | 18 |
| Makong River | 3023 to Ta-Li-Fu | 6000 | 6 | 224 |

Indian and few horses were used in the march of days stated where more required.





PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR APRIL, 1882.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 5th April, at 9-15 P. M.

The HON'BLE SIR ASHLEY EDEN, K. C. S. I., C. I. E., President, in the Chair.

The minutes of the last Meeting were read and confirmed.

The following presentations were announced :—

1. From the Panjab University College,—Elements of Hydrostatics, Hydraulics and Pneumatics in Hindi, by Navina Chandra Rai.

2. From the Surveyor General of India,—Supplement to the Catalogue of Maps, Plans, and Charts of the Survey of India.

3. From the British Museum,—Catalogue of the Birds in the British Museum, Vol. VI.

4. From the authors,—(1) Note sur la photographie de la Comète δ 1881, obtenue à l'Observatoire de Meudon, by J. Janssen ; (2) On the Origins of Caste and Tribal Names and the practical value of ascertaining them, by Lt. R. C. Temple.

5. From W. Bonnaud, Esq.,—A Biographical Sketch of the first Indigo Planter in India, the late Monsieur Louis Bonnaud, by H. James Rainey.

6. From the Government, N. W. P. and Oudh,—Statistical, Descriptive, and Historical Account of the North-Western Provinces of India, Vol. VI.

7. From Messrs. Thacker, Spink and Co.,—Hindu Tribes and Castes, Vol. III, by Rev. M. A. Sherring.

8. From the Director, St. Xavier's College Observatory,—St. Xavier's College, Calcutta, Solar Observatory. Observations for the months of December 1881, January and February 1882.

9. From the Public Museum, Buenos Aires,—Atlas de la Description Physique de la République Argentine. 2nd Section, Mammifères, Text; and 2nd Section, Mammifères, Pt. 1., Die Bartenwale der Argentinischen Küsten, Plates, by Dr. H. Burmeister.

10. From the Home Department; Forest Branch,—A Manual of Indian Timbers: an account of the Structure, Growth Distribution, and Qualities of Indian Woods, by J. S. Gamble; (2) Suggestions regarding Forest Administration in the North-Western Provinces and Oudh, by Dr. D. Brandis.

11. From the North China Branch, Royal Asiatic Society,—Report on the third International Geographical Congress, Venice, September 1881, by Lieut. G. Kreitner.

12. From H. F. Blanford, Esq.,—(1) Habitations Lacustres de la Savoie. Album, by L. Rabut; (2) Prehistoric Remains of Caithness, with notes on the Human Remains by Thomas H. Huxley, by Samuel Laing; (3) Aristotle: a Chapter from the History of Science, including analyses of Aristotle's scientific writings, by George Henry Lewes.

13. From Dr. Winckle,—Verzeichniss von Münzen und Denkmünzen der Erdtheile Australien, Asien, Afrika und verschiedener mohammedanischer Dynastien der Jules Fonrobert'schen Sammlung, by Adolph Weyl.

14. From Sir John Pope Hennessey,—Photograph of a screen painted for Tyko Sama of the first European ship that visited Japan.

15. From Nawab Siddiq Hasein Khan—14 Arabic books.

The following gentlemen are candidates for ballot at the next meeting.

1. H. E. Sir Donald M. Stewart, Bart., G. C. B., G. C. S. I., Commander-in-Chief, proposed by H. F. Blanford, Esq., seconded by J. Wood-Mason, Esq.

2. Kaviraj Shyamaldass, proposed by Pandit Mohunlal Vishnual Pandia, seconded by Dr. H. W. M'Cann.

3. H. H. Nawab Alijah Amir-ul-Mulk Syud Mahomed Siddeek Hus-san Khan, Bahadur, Consort of H. H. the Begum of Bhopal, proposed by Nawab Abdul Latif Khan, Bahadur, seconded by Dr. A. F. R. Hoernle.

4. Maulvi Golam Sarwar, proposed by Maulvi Kabiruddin Ahmad, seconded by Dr. A. F. R. Hoernle.

5. James B. Chalmers, Esq., C. E., Bengal Central Railway, proposed by J. Wood-Mason, Esq., seconded by H. B. Medlicott, Esq.

The SECRETARY reported that Dr. G. Bomford and Dr. E. W. Chambers had intimated their desire to withdraw from the Society.

The COUNCIL reported that Messrs. J. Westland and F. W. Peterson had completed their audit of the Society's Accounts and furnished a report. A vote of thanks was passed to the Auditors.

The COUNCIL recommended that the Society should subscribe Rs. 50 to the fund now being raised for a Memorial for Mr. L. Schwendler at the Zoological Gardens. The recommendation was approved.

THE PRESIDENT said the Governor of Hongkong, whom he had brought to the meeting, possessed a very rare Chinese Bank note which he would be kind enough to show to the Society.

SIR POPE HENNESSY, in laying the note upon the table, reminded the members that in the 2nd Book of Marco Polo's travels is a chapter entitled "How the great Kaan causeth the bark of trees, made into something like paper, to pass for money over all his country."

Marco Polo describes those bank notes as something resembling sheets of paper but black and of different sizes. He says they are made from the bark of the mulberry tree.

Four hundred years after Marco Polo wrote, the accuracy of his work was questioned on this very ground, it being imagined that the Chinese could not possibly have had paper money at a time when paper money was unknown in Europe. None of the notes seen by Marco Polo in the thirteenth century appears to have been preserved, but a few notes of the fourteenth century are in existence, of which this is one.

Col. Yule in his edition of Marco Polo says, "I have never heard of the preservation of any note of the Mongols; but some of the Ming dynasty survive and are highly valued as curiosities in China. The late Sir George Staunton appears to have possessed one; Dr. Lockhart formerly had two, of which he gave one to Sir Harry Parkes, and retains the other. The paper is so dark as to explain Marco's description of it as black. By Dr. Lockhart's kindness I am enabled to give (says Col. Yule) a reduced representation of this note, as near a facsimile as we have been able to render it, but with some restoration, *e. g.*, the seals of which in the original there is the barest indication remaining."

A facsimile of the note exhibited to the Society has been made by the Lithographic Branch of the Surveyor General's Office and will be issued with the Proceedings for April.

On comparing the original with the engraving in Col. Yule's edition it was seen to be twice the length and breadth of the latter, of a darker shade and with some variation in the conventional ornamentation.

The Plate annexed is as close a facsimile as was possible under the circumstances. The upper line of Chinese characters on the bank note

exhibited shows that it was printed in the Hung Woo period of the Ta Ming dynasty (A. D. 1368) so that it is about five hundred years old.

Col. Yule was under a misapprehension in thinking Sir Harry Parkes was one of those who possessed a copy of these rare notes. Sir Thomas Wade the present British Minister in Peking, on being shown this note, also said it was the only one of the Ming dynasty he had ever seen.

In reply to questions asked by some of the members, Sir Pope Hennessy explained that the note was "valued for one thousand," that is, 1000 cash, or one dollar. It bore the seals of the revenue officials, and appeared to be of Imperial currency as distinguished from the local or provincial paper money now used in some parts of China. The inscription on it denoted that any one convicted of forging the note would be punished by decapitation and any informer would receive a reward. This copy was got from the Chinese a few years ago by a European official of the Customs service who was well known as a collector of Chinese coins and old books, and on whose death in 1878 it was sold in Hongkong. His collection of Chinese coins was purchased by the Japanese Government. The note appeared to be printed from a block. The seals, of which a slight vermilion impression was visible, were similar to those now in use on official documents.

The following papers were read :—

1. *The Spirit-Levelling Operations executed in connection with the Tidal Observations of the Indian Survey Department.*—By LIEUT.-GENERAL J. T. WALKER, C. B., F. R. S., *Surveyor-General of India.*

The tidal stations at Madras and Bombay have now been connected by a line of spirit-levels carried directly across the peninsula, for the most part in the vicinity of the line of railway. The mean-sea level has been determined very approximately at each of the two tidal stations, and it would appear from the spirit-levelling operations that the mean-sea level is about 3 feet higher at Madras than at Bombay. That there are variations in the general level of the surface of the ocean at different places, so that, if compared with the surface of the spheroid or other geometrical figure which most closely corresponds to the figure of the earth, the surface of the ocean will in some places be above and in other places below that of the figure, is probable enough; and indeed this must certainly happen, whenever the attractive influences of mountains and other irregularities of the earth's surface on the waters of the ocean are not counteracted by deficiencies of density in the strata below the elevated masses. But as the surface of the ocean is everywhere maintained in equilibrium, there can be no flow of water from one point to another; thus there can be no sensible differences of level, though some points on the surface may be materially

higher than other points, as referred to a hypothetical geometrical surface, or, say, to the earth's centre. The differences of height, however considerable, must be insensible, because they cannot be measured by instrumental means; for the causes by which they would be produced must equally affect both the spirit-levels of the instruments and the water-levels of the ocean, whenever both are subjected alike to the same influences. Thus if in the present instance the spirit-levels had been carried, without error, along the coast line, from Bombay round *viâ* Cape Comorin to Madras, they must have shown identity of mean-sea level at Bombay and Madras, just as has been met with in the Red Sea and the Mediterranean on opposite sides of the Isthmus of Suez, and in the Atlantic and the Pacific Oceans, on opposite sides of the Isthmus of Panama. And this identity would be obtained even if there were actually a considerable difference of height, as is very possible; for the Western Ghats, and the generally greater elevation of the western as compared with the eastern half of the peninsula, are sources of attraction which, if not counteracted, must raise the mean-sea level at Bombay no less than 31 feet (as computed by Mr. Hennessey) above the mean-sea level at Madras.

The spirit-levels, however, were taken across the continent and not along the coast-line; they were carried from Bombay up the short and abrupt ascent to the crest of the Western Ghats, and then down the long and gentle decline to the east coast. Thus, while subject to the same general attractive influence of the continental masses as the ocean levels, they are also subject to the more proximate influences of local irregularities in the configuration of the ground passed over. The closing discrepancy of 3 feet at Madras is materially greater—both absolutely, and relatively to the distance levelled from Bombay—than any error previously met in the course of the levelling operations of this survey, which have been carried over many thousand miles and tested at a number of closing points and junctions of circuits, and have been conducted with special precautions to guard against errors of all kinds, whether accidental or cumulative. Moreover, a very similar discrepancy, almost identical in sign and magnitude, is stated to have been met with at the close of the railway levels between Madras and Bombay. Thus it has been surmised that the discrepancy may be due to the proximate and local attractions of the hills and table-lands over which the lines of level were carried, and which must exercise some influence on the instrumental levels, over and beyond the general influence that is exerted alike on both the instrumental and the ocean levels. Problems of this nature have been investigated mathematically by Colonel A. R. Clarke, C. B., R. E., and formulæ for their calculation are given in his recent valuable treatise on Geodesy. Mr. Hennessey has calculated the attractions with these formulæ, making such assump-

tions as regards the general configuration of the ground levelled over as appeared to be most reasonable and probable; and he has arrived at the conclusion that the levelling operations cannot have been influenced by the proximate and local attractions experienced on the line of operation to anything like the amount of the discrepancy met with.

Thus the discrepancy is possibly due chiefly to error in the levelling operations. As the most probable locus of such error was believed to lie in the section over the Ghâts, where the ascents were very steep and the staves were sometimes so close to the levelling instrument that the foot-marks could not be seen in the field of the telescope, that section was re-levelled; but the results of the two measurements were identical. And indeed it seems highly improbable that the discrepancy can be due to any accidental gross errors, seeing the special precautions which have been taken—by the employment of independent operators and instruments, and the use of double-faced staves—to guard against such errors.

But it has long been known that all spirit-levelling operations are liable to an accumulation of small errors which, though individually so minute as to be barely appreciable at any single station where the instrument is set up, have a tendency to be repeated at successive stations, and may therefore attain a considerable magnitude at the end of a long line of levels. In the operations of this Survey it is customary to guard, as much as possible, against such errors by various expedients,—such as observing the back staff first at one station and the forward staff first at the next, alternating the direction of operation on successive days, or at least executing half the work of a field season in the direction of the terminus and the other half in that of the origin; invariably setting up the staves at equal distances from the instrument at every station; and tilting the instrument occasionally, to guard against the heating influence of the sun—or the cooling influence of winds—acting on one side more than another, and causing dislevelments which would be frequently repeated if not counteracted, and thus create an accumulation of error. There is, however, a liability to personal misapprehension in reading the bubble of the spirit-level which may tend to produce a considerable accumulation of error on lines of which the general direction is either towards the sun or opposite to the sun. Owing to the level being placed above the telescope, the observer gets a side view of the bubble, refracted obliquely through the thickness of the glass tube, which is not so sharply defined as the look-down view from above. The rim round the bubble, caused by the adhesion of the liquid to the sides of the tube, becomes so prominent that its extremities may be observed instead of those of the bubble. When light falls obliquely and not vertically on the instrument, and either end of the telescope is pointed towards the light, the outer-edge of the rim at the end

of the bubble towards the light is more clearly defined than the inner, while at the opposite end of the bubble the inner-edge of the rim is more clearly defined than the outer. Consequently there is a tendency to assume the instrument to be level when in reality the end towards the light is depressed; and though this tendency would probably vary in magnitude with different observers, it is likely to affect all persons more or less. Obviously it is uninfluenced by reversing the direction of operation, though it disappears whenever the direction is at right angles to that of the light.

This personal error in reading the spirit-level and setting the instrument would obviously produce a maximum effect on lines of which the general direction is meridional, when the operations are carried on equally before and after noon; when carried on between sunrise and midday, as is more usual in this country, the direction of the line of maximum effect would be south-east by north-west. The result would be apparently to raise the southern stations relatively to the northern ones. Now this has been found to occur in a greater or less degree in all our lines of levels connecting tidal stations, and not only on the direct line from Bombay to Madras,—to the following extent in each instance:—

(1) From the mean sea level of the tidal station of Okha, at the entrance to the Gulf of Cutch, to that of Bombay, there is an apparent rise of $\cdot 33$ feet, length of line 580 miles.

(2) From the mean sea level of Bombay to that of Karwar, there is an apparent rise of $\cdot 93$ feet; length of line 530 miles.

(3) From the mean sea level of Karwar to that of Madras, there is an apparent rise of $\cdot 92$ feet; length of line 560 miles.

The apparent rise of 3 feet at Madras as compared with Bombay was generated on a line of 780 miles in length; it is thus materially greater in proportion to the length of line traversed than the discrepancies met with on the three other lines. But as all the discrepancies are in the same direction, and all agree in raising the southern points relatively to the northern, it appears possible that all the operations may have been influenced by oblique illumination of the bubbles of the spirit-levels. It is to be noted that Madras is meridionally 400 miles to the south of Bombay, and that an error of level adjustment amounting in arc to only $1''\cdot 2$, and recurring with the same sign at only one-fourth of the stations at which the instruments were set up—the operations being otherwise errorless—would produce a discrepancy of the magnitude which has been met with.

It has been considered desirable to enter very fully into the matter of this discrepancy, because long lines of level so frequently close without any appreciable error that disappointment may naturally be felt at the occurrence of so large a discrepancy as this, and the re-levelling of the entire line may be considered desirable. But the weakest section has already been

re-levelled and no error has been detected in it, and this would probably be also found to happen in all the other sections. It is to be remembered that to whatever extent the levels already taken may be influenced by variations of local attraction, or by oblique instrumental illumination, a second measurement over the same ground would be influenced to exactly the same extent by the first cause and somewhat similarly by the second, and therefore would probably close with a similar discrepancy.

In the general reduction of the spirit-levelling operations it will be assumed that the mean sea level, as determined at each tidal station, is the datum to which the spirit-levels should be referred in each instance. Any discrepancies which may be met with on closing a line at a tidal station will be dispersed over the line and treated as errors generated in the levelling operations.

2. *Description of a new species of Clausilia from the Nicobars.*—By O. F. VON MÖLLENDORFF, *Vice-Consul for Germany, Hongkong.*

This paper will be published in full in the Journal, Part II, for 1882.

3. *Life and Legend of Tson Khapa.*—By BABU SARAT CHUNDER DAS.

4. *Rise and Progress of Buddhism in Mongolia.*—By BABU SARAT CHUNDER DAS.

5. *The Indian Balhará, and the Arabian Intercourse with India in the ninth and following centuries.*—By EDWARD THOMAS, F. R. S.

The preceding three papers will be published in full in the Journal Part I, for 1882.

SIR ASHLEY EDEN, in resigning the office of President of the Society, said: As this is the last occasion on which I shall have the pleasure of presiding at your meetings, in consequence of my departure from India, I must ask you to let me thank you for the very great honor which you have done me in twice electing me to be your President. I am sensible of the very incomplete and inefficient manner in which I have performed the duties of that office, but I need not assure you that this has not been the result of any indifference on my part to the interests of the Society but of unavoidable circumstances. It so happens that at the time when I am down in Calcutta, and should otherwise be able to preside at your meetings, I am prevented by the numerous engagements of the winter season from attending the Society's meetings as frequently as I should wish to do. I now resign the office to which you did me the honor to elect me, and it will fall to the Council to appoint some one to take my place as President for the remainder of the year.

The Hon'ble H. J. REYNOLDS said: Sir Ashley Eden,—On behalf of the members who are here to-night—and I am sure I may also speak for those who are absent—I desire to express our regret at the approaching severance of your connection with the Society, and at the same time our satisfaction at your appointment by Her Majesty to the responsible post of a Member of the Council of India. We all feel, Sir, that that Presidential Chair, in which you have had so many illustrious predecessors, has seldom, if ever, been more worthily occupied than by the successful administrator whose name will long be memorable for much good work done for the progress and developement of the Province of Bengal. In the name of the Asiatic Society, I beg to tender you the cordial good wishes of us all.

LIBRARY.

The following additions have been made to the Library since the Meeting held in March last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS, *presented by the respective Societies and Editors.*

Berlin. K. preussische Akademie der Wissenschaften,—*Monatsbericht*, December 1881.

Bombay. The Indian Antiquary,—Vol. XI, Part 180, March 1882.

Bordeaux. Société de Géographie Commerciale,—*Bulletin*, Nos. 3-5

Bruxelles. Société Royale des Sciences de Liège,—*Mémoires*, Vol. IX.

Calcutta. Agricultural and Horticultural Society of India,—*Journal*, Vol. VI, Part 4.

———. Geological Survey of India,—*Memoirs*, Vol. XIX, Part 1.

———. Original Meteorological Observations, for June 1881.

Dresden. Naturwissenschaftliche Gesellschaft, Isis,—*Sitzungsbericht und Abhandlungen*, July to December, 1881.

Dublin. Royal Dublin Society,—*Proceedings*, Vol. II, Part 7; and Vol. III, Parts 1-4.

———. ———. Transactions,—Vol. I, Nos. 13-14.

———. Royal Geological Society of Ireland,—*Journal*, Vol. VI, Part 1, 1880-81.

Lahore. Anjuman-i-Punjab,—*Journal* (English Section), Vol. II, Nos. 12-13.

London. The Academy,—Nos. 510-513.

- London. The Athenæum, Nos. 2833-2837.
- . Anthropological Institute,—Journal, Vol. XI, Nos. 1 and 2.
- . Institution of Mechanical Engineers,—Proceedings, No. 4, October 1881.
- . Nature, Vol. XXV, Nos. 629, 641-645.
- . Royal Society,—Proceedings, Vol. XXXIII, No. 216.
- . Royal Astronomical Society,—Monthly Notices, Vol. XLII, No. 2, December 1881.
- . Royal Geographical Society,—Proceedings, Vol. IV, Nos. 1 and 3, January and March 1882.
- . Royal Microscopical Society,—Journal, Vol. I, (New Series), Part 6.
- . Society of Telegraph Engineers,—Journal, Vol. X, No. 39.
- Lyon. Société de Géographie,—Bulletin, Vol. IV, No. 22, 1881.
- Paris. Société de Géographie,—Bulletin, August 1881.
- . ———. Compte Rendu des Séances, 6th and 20th January; and 3rd and 17th February, 1882.
- . ———. List of Members, 31st December 1881.
- . Société Zoologique de France,—Bulletin, No. 5, 1881.
- Rome. R. Accademia dei Lincei,—Atti, Vol. VI, Nos. 4-6.
- . Società degli Spettroscopisti Italiani,—Memorie, Vol. X, No. 12; and Index to Vol. X.
- St. Petersburg. L'Académie Impériale des Sciences de St. Pétersbourg,—Bulletin, Vol. XXXVII, No. 3.
- . ———. Mémoires, Vol. XXVIII, Nos. 8-9; and Vol. XXIX, No. 1.
- . Russian Geographical Society,—Proceedings, 1881.
- Turin. R. Accademia delle Scienze,—Atti, Vol. XVII, No. 1.
- Vienna. Kaiserliche Akademie der Wissenschaften,—Sitzungsberichte, mathematisch-naturwissenschaftliche Classe, Part i, Vol. LXXXII, Nos. 3-5; Vol. LXXXIII, Nos. 1-4: Part ii, Vol. LXXXII, Nos. 3-5; Vol. LXXXIII, Nos. 1-4: Part iii, Vol. LXXXII, Nos. 3-5; Vol. LXXXIII, Nos. 1-2.
- . ———. Philosophisch-historische Classe,—Vol. XCVII, Nos. 1-3; Vol. XCVIII, Nos. 1-2.
- . ———. Denkschriften,—philosophisch-historische Classe, Vol. XXXI.
- . ———. Almanach, 1881.
- Yokohama. Deutsche Gesellschaft für Natur und Völkerkunde Ostasiens,—Mittheilungen, February 1882.

BOOKS AND PAMPHLETS,

presented by the Authors.

JANSSEN, J. Note sur la Photographie de la Comète *b* de 1881, obtenue à l'Observatoire de Meudon. 8vo. Paris, 1882.

TEMPLE, LIEUT. R. C. On the Origins of Caste and Tribal Names and the practical value of ascertaining them. 8vo. Lahore, 1882.

MISCELLANEOUS PRESENTATIONS.

Report on Municipal Taxation and Expenditure in the Lower Provinces of Bengal for the year 1880-81. Fcp. Calcutta, 1882.

BENGAL GOVERNMENT.

LAING, SAMUEL. Prehistoric Remains of Caithness; with Notes on the Human Remains, by Thomas H. Huxley. 8vo. London, 1866.

LEWES, GEORGE HENRY. Aristotle: a chapter from the History of Science, including analyses of Aristotle's Scientific Writings. 8vo. London, 1864.

RABUT, L. Habitations Lacustres de la Savoie. Album. 4to. Chambéry, 1864.

H. F. BLANFORD, Esq.

RAINEY, H. JAMES. Biographical Sketch of the First Indigo Planter in India, the late Monsieur Louis Bonnaud. 8vo. Calcutta, Pam.

W. BONNAUD, Esq.

Catalogue of the Birds in the British Museum. Vol. VI. 8vo. London, 1881.

BRITISH MUSEUM.

St. Xavier's College, Calcutta, Solar Observatory. Observations for the months of December 1881, January and February 1882. 4to. Calcutta, 1882.

DIRECTOR, ST. XAVIER'S COLLEGE OBSERVATORY.

BRANDIS, DR. D. Suggestions regarding Forest Administration in the North-Western Provinces and Oudh. Fcp. Calcutta, 1882.

GAMBLE, J. S. A Manual of Indian Timbers: an Account of the Structure, Growth, Distribution, and Qualities of Indian Woods. 8vo. Calcutta, 1881.

HOME DEPARTMENT, FOREST BRANCH.

The Indian Antiquary,—Vol XI, Part 130, March 1882.

HOME DEPARTMENT.

Report on the administration of the Madras Presidency during the year 1880-81. 8vo. Madras, 1881.

MADRAS GOVERNMENT.

KREITNER, LIEUT. G. Report on the Third International Geographical Congress, Venice, September 1881. 8vo. Pam.

NORTH CHINA BRANCH, ROYAL ASIATIC SOCIETY.

Statistical, Descriptive, and Historical Account of the North-Western Provinces in India. Vol. VI. 8vo. Allahabad, 1881.

GOVERNMENT OF THE N. W. PROVINCES.

Report on the Sanitary Administration of the Panjab for the year 1880. 4to. Lahore, 1882.

Report on the Administration of the Panjab and its Dependencies for 1880-81. 8vo. Lahore, 1881.

PANJAB GOVERNMENT.

RAI, NAVINA CHANDRA. Elements of Hydrostatics, Hydraulics and Pneumatics in Hindi. 8vo. Lahore, 1882.

PANJAB UNIVERSITY COLLEGE.

BURMEISTER, DR. H. Atlas de la Description Physique de la République Argentine. 2nd Section, Mammifères (Text). 4to. Buenos Aires, 1881.

———. 2nd Section, Mammifères; Part 1, Die Bartenwale der Argentinischen Küsten (Plates). Fol. Buenos Aires, 1881.

PUBLIC MUSEUM, BUENOS AIRES.

Seventh Annual Report of the Sanitary Commissioner with the Government of India, 1880. 4to. Calcutta, 1882.

LEWIS, SURGEON-MAJOR T. R. A Memorandum on the Dietaries of Labouring Prisoners in Indian Jails. Fcp. Calcutta, 1882.

SANITARY COMMISSIONER, GOVERNMENT OF INDIA.

SHERRING, REV. M. A. Hindu Tribes and Castes. Vol. III. 4to. Calcutta, 1881.

MESSRS. THACKER, SPINK AND CO.

WEYL, ADOLPH. Verzeichniss von Münzen und Denkmünzen der Erdtheile Australien, Asien, Afrika und verschiedener mohammedanischer Dynastien der Jules Fonrobert'schen Sammlung. 8vo. Berlin, 1878.

DR. WINCKLE.

PERIODICALS PURCHASED.

Benares. Fallon's New English-Hindustani Dictionary,—Part VII.

Berlin. Sanders' Ergänzungs-Wörterbuch der deutschen Sprache,—Parts 5-14.

Calcutta. Indian Medical Gazette,—Vol. XVII, No. 3, March 1882.

Edinburgh. Edinburgh Review, No. 317, January 1882.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. VII, No. 2.

Göttingen. Gelehrte Anzeigen,—Nos. 6-10.

———. Nachrichten,—Nos. 2-3.

- Leipzig. *Annalen der Physik und Chemie*,—Vol. XV, No. 2.
 ———. *Beiblätter*,—Vol. VI, No. 2.
 ———. *Botanisches Centralblatt*,—Vol. VIII, Nos. 10-13.
 ———. *Deutsche Litteraturzeitung*, Nos. 50-52, 1881; and Nos. 1-2, 1882.
 ———. *Hesperos*,—Vol. I, Nos. 15-17.
 ———. *Litterarisches Centralblatt*,—Nos. 50-52, 1881; and Nos. 1-3, 1882.
- London. *Annals and Magazine of Natural History*,—Vol. IX, No. 49, January 1882.
 ———. *Chemical News*,—Vol. XLV, Nos. 1159-1163.
 ———. *Entomologist*,—Vol. XV, No. 224, January 1882.
 ———. *Entomologist's Monthly Magazine*,—Vol. XVIII, No. 212, January 1882.
 ———. *Journal of Botany*,—Vol. XI, No. 229, January 1882.
 ———. *Journal of Conchology*,—Vol. I, Nos. 4-16.
 ———. *Journal of Science*,—Vol. IV, No. 97, January 1882.
 ———. *London, Edinburgh and Dublin Philosophical Magazine*,—Vol. XIII, No. 78, January 1882.
 ———. *Messenger of Mathematics*,—Vol. XI, No. 8.
 ———. *Mind*,—No. 25, January 1882.
 ———. *Nineteenth Century*,—Vol. XI, No. 59, January 1882.
 ———. *Numismatic Chronicle*,—Vol. I (3rd Series), Part 3, 1881.
 ———. *Publishers' Circular*,—Vol. XLV, Nos. 1066-1067.
 ———. *Quarterly Journal of Microscopical Science*,—Vol. XXII, No. 85, January 1882.
 ———. *Quarterly Review*,—Vol. CLIII, No. 305, January 1882.
 ———. *Society of Arts*,—*Journal*, Vol. XXX, Nos. 1525-1529.
 ———. *The Ibis*,—Vol. VI, No. 21, January 1882.
- New Haven. *American Journal of Science*,—Vol. XXII, No. 132, December 1881; and Vol. XXIII, No. 133, January 1882.
- Paris. *Annales de Chimie et de Physique*,—Vol. XXV, February 1882.
 ———. *Comptes Rendus*,—Vol. XCIV, Nos. 5-9.
 ———. *Journal Asiatique*,—Vol. XVIII, No. 3, October to December, 1881.
 ———. *Journal des Savants*,—January 1882.
 ———. *Revue Critique*,—Vol. XIII, Nos. 7-10; and Index to Vol. XII.
- . *Revue des Deux Mondes*,—Vol. XLIX, No. 4; Vol. L, No. 1.
 ———. *Revue de Linguistique*,—Vol. XV, Fas. 1.
 ———. *Revue Scientifique*,—Vol. XXIX, Nos. 5-10.

BOOKS PURCHASED.

- BUEHLER, DR. GEORG. The *Pāyālaśchhī Nāmamālā*, a Prakrit Kosha, by Dhanapāla, 8vo. Göttingen, 1879.
- FORBES, CAPT. C. J. F. S. Comparative Grammar of the Languages of Further India : a fragment. And other Essays. 8vo. London, 1881.
- GORDON, J. E. H. A Physical Treatise on Electricity and Magnetism. Vols. I-II. 8vo. London, 1880.
- GRASSMAN, H. Wörterbuch zum Rig-Veda. Part IV. 8vo. Leipzig, 1874.
- MAXWELL, JAMES CLERK. A Treatise on Electricity and Magnetism. Vols. I-II. 8vo. Oxford, 1881.
- MUELLER, DR. E. Beiträge zur Grammatik des Jainaprākṛit. 8vo. Berlin, 1876. Pam.
- MUELLER, EDUARD. Der Dialekt der Gāthās des Lalitavistara. 8vo. Weimar, 1874. Pam.
- POWELL, J. W. Introduction to the Study of Indian Languages, with words, phrases and sentences to be collected. 2nd Edition. 4to. Washington, 1880.
- STRACHEY, SIR J.; and STRACHEY, LIEUT.-GENL. R. The Finances and Public Works of India, 1869-1881. 8vo. London, 1881.
- SUBHUTI, WASKADUWE. Abhidhānappadīpikā ; or Dictionary of the Pali Language, by Moggallāna Thero. With English and Singhalese Interpretations, Notes, and Appendices. 8vo. Colombo, 1865.
- YARROW, DR. H. C. Introduction to the Study of Mortuary Customs among the North American Indians. 4to Washington, 1880. Pam.
-



FACSIMILE OF A BANK NOTE OF THE MING DYNASTY (1368).

Designed by the British Museum, London, May 1853.

9. From the Madras Literary Society,—Madras Journal of Literature and Science, Vol. V (1st Ser.).

10. From F. A. de Roepstorff, Esq.,—A collection of Andamanese Butterflies.

The following gentlemen duly proposed and seconded at the last meeting were ballotted for and elected Ordinary Members:

1. H. E. Sir Donald M. Stewart, Bart., G. C. B., G. C. S. I.
2. J. B. Chalmers, Esq., C. E.
3. H. H. Nawab Alijah Amir-ul-Mulk Syud Mahomed Siddeek Hussan Khan, Bahadur.
4. Kabiraj Shyamaldass.
5. Moulvie Golam Sarwar.

The following gentlemen are candidates for ballot at the next meeting:

1. Professor E'. Senart, proposed by Dr. A. F. R. Hoernle, seconded by Nawab Abdul Lutif Khan, Bahadur.
2. Maharajah Kumar Harendra Kishore Singh, Bahadur, Bettiah, proposed by Nawab Abdul Latif Khan, Bahadur, seconded by Rajah Satyanand Ghoshal, Bahadur.

The following gentleman has intimated his desire to withdraw from the Society:

Babu Jnanendra Chunder Ghosha.

The SECRETARY reported that Mr. W. T. Blanford had compounded for all his future subscriptions.

The CHAIRMAN announced that the Council recommended that the following gentlemen should be elected Associate Members, and that they would be balloted for at the next meeting of the Society:

F. A. de Roepstorff, Esq., Assistant Superintendent, Port Blair, in recognition of his long continued and successful labours as a collector, by which the knowledge of the interesting fauna of the Andaman and Nicobar Islands has been so much extended, as well as of his contributions to the Ethnology of the Islands.

Herbert Giles, Esq., of H. M. Consular Service in China, on account of his services to Chinese scholarship, especially in translating Fa Hian, and one of the Buddha Gaya Chinese inscriptions.

The COUNCIL reported that they had elected the Hon'ble H. J. Reynolds as President in the place of Sir Ashley Eden who had resigned; Mr.

H. F. Blanford as Vice-President in the place of Mr. H. J. Reynolds, and Mr. A. W. Croft as Member of Council in place of Mr. H. F. Blanford.

The elections were confirmed by the meeting.

DR. A. F. R. HOERNLE exhibited three Gupta Coins found near Mahanad, received from the Rev. K. S. Macdonald, and described them as follows:

I. *Kumdra Gupta.*

Much like that described in Indian Antiquities, p. 384, class E, b. *Obverse*: standing figure of king; legend: *Srī Mahārājādhirāja śrī Kumdra Gupta*; under the arm: *Ku.* *Reverse*: Seated female figure on lotus; legend, almost illegible: *Srī Mahendra.*

II. *Skanda Gupta.*

Somewhat like that described in Indian Antiquities, p. 386, class E, b. *Obverse*: standing figure of king; legend, under the arm, *skanda*; marginal legend worn away. *Reverse*: female figure seated on lotus; legend, scarcely legible: *Srī Skanda Gupta (?)*. The legend under the arm might be *Chandra*; in which case the coin would be one of Chaudra Gupta II.

III. *Unknown.*

In general appearance it much resembles the Gupta coins. *Obverse*: Walking elephant, mounted by two persons, *viz.*, king on the neck, carrying ankus; behind him, on the back of the elephant, an attendant holding a state umbrella over the king, with long pennant attached to umbrella. Around the whole margin a long inscription in Gupta characters, most of which are half worn away. *Reverse*: Nude, bejewelled female figure standing to front, on a lotus, with halo round the head, right forearm upturned, holding some indistinguishable object, left hand placed on hip and holding apparently a lotus or cornucopia; round her shoulders and dependant on both sides a long scarf; by side of right foot of female figure, the conventional sign of a *chetiya*, placed on edge, *i. e.*, with its base parallel to the leg of the figure; on left of figure, something resembling a conch-shell (or perhaps a *bodhi*-tree). A circle of dots round the margin. To left of figure a short, partly illegible, inscription in Gupta characters; only *ja* or perhaps *rāja* can be read. The outline of the female figure differs somewhat from that on the ordinary Gupta coins; it is shorter and stouter and resembles the corresponding figures on the later Indo-Scythian coins. Impressions

of this coin have been sent to General Cunningham, whose identification, when received, will be communicated to the Society.



The following papers were read—

1. *Rise and Progress of Buddhism in Mongolia.*

By BABU SARAT CHANDRA DASS.

This paper will be published in the Journal, Pt. I, for 1882.

2. *Second List of Diurnal Lepidoptera inhabiting the Nicobar Islands.—*

By J. WOOD-MASON, Deputy Superintendent, Indian Museum, and LIONEL DE NICEVILLE.

71 species, none new, are recorded.

This paper will be published in the Journal, Part II, for the current year, with one plate illustrative of new species described in a previous paper.

3. *Descriptions of some new Asiatic Clausiliæ.*

By DR. O. F. VON MÖLLENDORFF.

(Abstract.)

In this paper the author describes three new species of *Clausilia*, one from Mergui obtained by Dr. Anderson, and two from Japan by Brigade-Surgeon Hungerford.

1. *Clausilia andersoniana*, n. sp., allied to *C. insignis*, Gould, from which it differs in its smaller size, less ventricose shape, more elongate and oblique aperture, freer and more protruding peristome, paler colouring, in the closing apparatus, in having one whorl less, etc.

2. *Clausilia (Cylindrophaedusa) micropeas*, n. sp., near to *C. gracilispira*, differing in the smaller number of whorls, less slender shape, larger aperture, shorter principal, and usually single palatal, plait.

HAB. Chinsingi.

3. *Clausilia (Hemiphaedusa) subulina*, n. sp., slender, fusiform, whorls 10, peristome free, expanded, somewhat reflected, thickened, white-lipped, etc.

HAB. Chinsingi.

This paper will be published in the forthcoming number of the Journal Part II, for the current year.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR JUNE, 1882.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 7th June, at 9.15 p. m.

The HON'BLE H. J. REYNOLDS, President, in the Chair.

The Chairman briefly expressed his acknowledgments to the Society for the honour conferred upon him by his election as President.

The minutes of the last Meeting were read and confirmed.

The following presentations were announced :—

1. From E. Colborne Baber, Esq., Chinese Secretary to H. M.'s Legation, Peking,—A copy of a Lolo Manuscript.

2. From the authors,—(1) A. Ivánoff's Russian Grammar. Translated, enlarged and arranged for the use of English Students of the Russian Language, by Major Walter E. Gowan; (2) *Sur l'Origine des Calcaires Devoniens de la Belgique*, by Ed. Dupont; (3) *The International Numismata Orientalia*. Vol. III, Part I.—Coins of Arakan, of Pegu, and of Burmah, by Sir Arthur P. Playre; (4) *Ueber die Bewohner des Nicobaren*, by F. A. de Roepstorff.

3. From the Royal Library, Munich,—*Catalogus Codicum Latinorum Bibliothecæ Regiæ Monacensis*, Vol. II, Part 4, by Carolus Halm and Gulielmus Meyer.

4. From E. Dupont, Esq.,—(1) *Sur l' Origine des Calcaires Devoniens de la Belgique*, by G. Dewalque; and *Sur une revendication de priorité introduite devant l' Académie par M. G. Dewalquo à propos de ma note sur l'origine des Calcaires Devoniens de la Belgique*.

5. From the Bataviaasch Genootschap van Kunsten en Wetenschappen,—*Tabel van Oud- en Nieuw- Indische Alphabetten*, by K. F. Holle.

6. From the Revenue and Agricultural Department,—*Handbook of the collection illustrative of the Wild Silks of India*, in the Indian Section

of the South Kensington Museum, with a catalogue of the collection and numerous illustrations, by Thomas Wardle.

7. From the Honorary Secretary to the Museum,—Jeypore Economic and Industrial Museum. First Report.

8. From the Calcutta University,—Tagore Law Lectures:—1881. The Law of Trusts in British India; with an appendix, by William F. Agnew.

9. From the Australian Museum, Sydney,—Catalogue of the Australian Stalk- and Sessile-eyed Crustacea, by William A. Haswell.

The following gentlemen duly proposed and seconded at the last meeting were ballotted for and elected Ordinary Members:—

Prof. E'. Senart.

Maharaja Kumar Harendra Kishore Singh, Bahadur.

The following gentleman has intimated his desire to withdraw from the Society:—

P. Donaldson, Esq.

The following gentlemen duly proposed at the last meeting were ballotted for and elected Associate Members:—

F. A. de Roepstorff, Esq.

Herbert Giles, Esq.

The SECRETARY reported that the following work had been accepted for publication in the Bibliotheca Indica Series:—

Text of the *Parīṣiṣṭaparvan*, with introduction. Edited by Hermann Jacobi, Sanskrit Professor, Academy of Münster.

The SECRETARY read a letter from Mr. C. E. Fendall describing the manner in which Tibetans prepare their paper.

The following papers were read:

1. *Some Hindu Folksongs from the Panjab.*

By LIEUT. R. C. TEMPLE, B. S. C., F. R. G. S., M. R. A. S., etc.

(Abstract.)

This paper consists of 64 songs and catches popularly sung in the Panjab, especially in Kangra and Chamba, treated from a philological point of view. The language of some of them is Hindī, but most of them are in the current village Panjābī of the day. The language of those from Kangra and Chamba does not differ in the main from that of the songs from the plains of the Panjāb. Lieut. Temple has divided the songs into classes according to the following subjects: (1) Religion, (2) Religious Customs, (3) Love, (4) Marriage, (5) Home Customs, (6) Nursery Rhymes, (7) Localities, (8) Riddles and facetiæ, and (9) Politics.

This paper will be published in the Journal, Part I, for 1882.

2. *Essays on Biháří Declension and Conjugation.*

By G. A. GRIERSON, B. C. S.

(Abstract.)

Hitherto only two dialects of the Biháří language have been thoroughly investigated and each of these in one special form. These two dialects are—the Bhojpúrí as spoken near Benares, treated of by Dr. A. F. Rudolf Hoernle in his “Comparative Grammar of the Gaudian Languages” and the Maithilí, the standard dialect of the centre of Mithila, investigated by Mr. G. A. Grierson in his “Maithilí Grammar.” The Mágadhí dialect has not been treated of in any form, but it is a very interesting subject for study as showing the stepping-stone between the somewhat archaic forms contained in standard Maithilí, and the more phonetically attrited forms found in Bhojpúrí.

The author's object in these essays is to bring to a common focus all the information which he has collected concerning the dialects of Bihár. The dialects mainly treated of are the following :—

- A. Bhojpúrí, spoken in Western Bihár.
- B. Mágadhí, spoken in South Bihár.
- C. Maithilí, spoken in North-East Bihár.

Of the last, there are two sub-dialects :

- (1.) North Maithilí of North Tirhut and Bhagalpur.
- (2.) South Maithilí of South Tirhut and North Munger.

Besides these, the dialects of language border lands have been considered, *viz.*,

- (A.) The Baiswáří of the Ramáyana of Tulsi Dás, which is the border dialect between Biháří (Bhojpúrí) and Hindí ;
- (B.) The dialects of the border land between Biháří (Maithilí) and Bengali.

This paper will be published in Journal, Part I, for 1882.

3. *Notes on Buddhist Sculptures with reference to the handling of Celts and other weapons.*—By JOHN COCKBURN.

(Abstract.)

This paper gives a new interpretation of Pl. XXXII of Fergusson's ‘Tree and Serpent Worship,’ which is a representation of the 3rd bas-relief from the top on the inner face of the left hand pillar of the eastern gateway, Plate XIV. Mr. Fergusson explains the sculpture as representing a family of Dasyus following their usual avocations. Mr. Cockburn is of opinion that it is intended to represent the workshop of a Bronze Smith of the period, and shows how all the different figures are consistent with this explanation. In the plate there are two men on the right, who, both in Mr. Fergusson's and in Mr. Cockburn's interpretation, are taken

to be cleaving wood with axes, the heads of the axes being tied on to the shafts with cross ligatures. Mr. Cockburn discusses the question why in an age of considerable mechanical ability the men of the bronze age did not cut their axes with a transverse hole through which the handle might pass. He concludes that this arose neither from a want of the requisite skill nor for want of a proper conception of the pattern, but simply from the fact that the eyeletted axe required a comparatively extravagant expenditure of metal, which, although not generally uncommon at the period indicated, would be so amongst the mixed aboriginal class, who were poor as a rule and possessed of the simplest implements procurable. To show that the people of this age were acquainted with the modern method of making the axe-head, Mr. Cockburn instances Plate XLIII, fig. 2, from the coping of the Bharhut stupa, where a hunter is represented bearing on his left shoulder an axe clearly of the eyeletted pattern, differing in no respect from the modern axe. The paper concludes with some remarks on the saw-like implement in Plate XXVI, fig. 6, of the Bharhut sculptures, and on the arrows of that period.

LIBRARY.

The following additions have been made to the Library since the Meeting held in April last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. III, No. 6, February 1882.

———. ———. American Journal of Mathematics,—Vol. IV, No. 2.

———. ———. American Journal of Philology,—Vol. II, No. 8.

———. ———. Circulars,—No. 13, February 1882.

———. ———. Studies from the Biological Laboratory,—Vol. II, No. 2.

Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—Notulen, Vol. XIX, Nos. 2-4, 1881.

———. ———. Verhandelingen,—Vol. XLI, Nos. 1 and 3.

———. Tijdschrift voor Indische Taal-, Land- en Volkenkunde,—Vol. XXVII, Nos. 1-5.

———. Magnetical and Meteorological Observatory,—Observations, Vol. V, Part 6.

———. ———. Rainfall in the East Indian Archipelago, 1881.

- Bombay. The Indian Antiquary,—Vol. XI, Parts 131-132, April and May, 1881.
- Bordeaux. Actes de la Société Linnéenne,—Vols. XXV-XXXIII; and Atlas.
- . Société de Géographie Commerciale,—Bulletin, Nos. 6-9.
- Calcutta. Geological Survey of India,—Records, Vol. XV, Part 2, 1882.
- Colombo. Royal Asiatic Society,—Ceylon Branch, Proceedings, 1881.
- Florence. Archivio per l'Antropologia e la Etnologia,—Vol. XI, Part 3.
- Leipzig. Deutsche morgenländische Gesellschaft,—Zeitschrift, Vol. XXXV, Part 4.
- London. The Academy,—Nos. 514-521.
- . The Athenæum,—Nos. 2838-2845.
- . Anthropological Institute of Great Britain and Ireland,—Journal, Vol. XI, No. 13, February 1882.
- . Geological Society,—Quarterly Journal, Vol. XXXVIII, No. 149, Part 1, 1882.
- . Nature,—Vol. XXV, Nos. 646-652; and Vol. XXVI, No. 653.
- . Royal Society,—Proceedings, Vol. XXXIII, No. 217.
- . Royal Asiatic Society,—Journal, Vol. XIV, Part 1.
- . Royal Astronomical Society,—Memoirs, Vol. XLVI, 1880-81.
- . Monthly Notices,—Vol. XLII, Nos. 3-4, January and February, 1882.
- . Royal Geographical Society,—Proceedings, Vol. IV, No. 2, February 1882.
- . Supplementary Papers, Vol. I, Part 1.
- . Royal Microscopical Society,—Journal, Vol. II (2nd Series), Part 1.
- . Society of Telegraph Engineers,—Journal, Vol. XI, No. 40.
- . Statistical Society,—Journal, Vol. XLIV, Part 4, December 1881.
- Madras. Journal of Literature and Science,—Vol. V (1st Ser.).
- Munich. Repertorium für Experimental-Physik,—Vol. XVIII, No. 4.
- New Haven. American Oriental Society,—Journal, Vol. XI, No. 1.
- Paris. Journal Asiatique,—Vol. XIX, No. 1, January 1882.
- . Société Académique Indo-Chinoise,—Actes, compte rendu des séances, Vol. I (1877-78-79), Part 1.
- . Mémoires,—Vol. II.
- . Société d'Anthropologie,—Bulletin, Vol. IV (3rd Series), No. 3.
- . Société de Géographie,—Compte Rendu des Séances, 3rd and 17th March; and 14th April, 1882.
- . Bulletin, September and October, 1881.
- . Société Zoologique de France,—Bulletin, Parts 5-6, 1877; Parts 1-4, 1878; Parts 5-6, 1879; and Parts 1-4, 1880.
- . Statuts et Réglements, 1876.

- Rome. R. Accademia dei Lincei,—Atti, Vol. VI, Parts 7-10.
 ——. Società degli Spettroscopisti Italiani,—Memorie, Vol. XI, Nos. 1-3, January to March, 1882.
 St. Petersburg. L'Académie Impériale des Sciences,—Mémoires, Vol. XXIX, Nos. 2-3.
 Schaffhausen. La Société Entomologique Suisse,—Bulletin, Vol. VI, No. 5.
 Shanghai. North China Branch of the Royal Asiatic Society,—Journal, Vol. XVI, Part 1, 1881.
 Simla. United Service Institution of India,—Journal, Vol. XI, No. 50.
 Sydney. Royal Society of New South Wales,—Journal and Proceedings, Vol. XIV, 1880.
 Trieste. Atti della Società Toscana di Scienze Naturali,—Processi Verbali, Vol. III, January 1882.
 Turin. R. Accademia delle Scienze,—Atti, Vol. XVIII, No. 2.
 Vienna. Anthropologische Gesellschaft,—Mittheilungen, Vol. XI, Parts 1 and 2.
 ——. K. k. geologische Reichsanstalt,—Jahrbuch, Vol. XXXI, Nos. 2-11.
 ——. Verhandlungen, Nos. 8-18 of 1881.
 Zagreb. Viestnik Hrvatskoga Arkeologickoga Druztva,—Vol. IV, No. 2.

BOOKS AND PAMPHLETS,

presented by the Authors.

- CROIZIER, M. LE MARQUIS DE. Les monuments de l'ancien Cambodge, classés par provinces. 16mo. Paris, 1878. Pam.
 ——. Les Explorateurs du Cambodge. 8vo. Paris, 1881. Pam.
 DUPONT, ED. Sur l'Origine des Calcaires Devoniens de la Belgique. 8vo. Brussels. Pam.
 GIBERT, EUGENE. Le mouvement économique en Portugal et le Vicomte de San Januairio. 8vo. Paris, 1881. Pam.
 GOWAN, MAJOR WALTER E. A. Ivánoff's Russian Grammar. Translated, enlarged and arranged for the use of English Students of the Russian Language. 8vo. London, 1882.
 MALLERY, GARRICK. Sign Language among North American Indians, compared with that among other peoples and deaf-mutes. 4to. Washington, 1881.
 PHAYRE, SIR ARTHUR P. The International Numismata Orientalia, Vol. III, Part 1.—Coins of Arakan, of Pegu, and of Burmah. 4to. London, 1882, Pam.
 ROEPSTORFF, F. A. R. DE. Ueber die Bewohner der Nicobaren. 8vo. Berlin, 1881. Pam.

MISCELLANEOUS PRESENTATIONS.

HASWELL, WM. A. Catalogue of the Australian Stalk- and Sessile-Eyed Crustacea. 8vo. Sydney, 1882.

AUSTRALIAN MUSEUM, SYDNEY.

HOLLE, K. F. Tabel van Oud- en Nieuw-Indische Alphabetten. 8vo. Batavia, 1882.

BATAVIAASCH GENOOT. VAN KUNSTEN EN WETENSCHAPPEN.

ROBISON, JOHN. A system of Mechanical Philosophy. 4 vols. 8vo. Edinburgh, 1822.

H. F. BLANFORD, Esq.

Records of the Geological Survey of India. Vol. XIV, Pt. 4. 1881.

BENGAL GOVERNMENT.

Report on the Judicial Administration (Civil) of the Central Provinces for the year 1881. Fep. Nagpur, 1882.

Report on the Judicial Administration (Criminal) of the Central Provinces for the year 1881. Fep. Nagpur, 1882.

Report on the Jails of the Central Provinces for the year 1881. Fep. Nagpur, 1882.

Report on the Police Administration of the Central Provinces for the year 1881. Fep. Nagpur, 1882.

Report on the working of the Government Charitable Dispensaries in the Central Provinces for the year 1881. Fep. Nagpur, 1882.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

AGNEW, WILLIAM FISCHER. Tagore Law Lectures :—1881. The Law of Trusts in British India ; with an Appendix. 8vo. Calcutta, 1882.

CALCUTTA UNIVERSITY.

Sur l'Origine des Calcaires Devoniens de la Belgique, par G. Dewalque ; et sur une revendication de priorité introduite devant l'Académie par M. G. Dewalque à propos de ma note sur l'origine des Calcaires Devoniens de la Belgique, par E. Dupont. 8vo. Brussels, 1882.

E. DUPONT, Esq.

Gazetteer, N. W. Provinces. Vol. X. The Himalayan Districts of the North-Western Provinces, Vol. I. 8vo. Allahabad, 1882.

GOVERNMENT, N. W. PROVINCES.

Catalogue of Sanskrit Works and MSS. in the possession of the Rewah State. Fep.

SIR LEPEL GRIFFIN.

FALLON, S. New English-Hindustani Dictionary, Part 8. 8vo. Benares, 1882.

Indian Antiquary. Vol. XI, Pts. 131-132, April and May, 1882.

HOME DEPARTMENT.

Jeypore Economic and Industrial Museum. First Report. Fep. Calcutta, 1882.

JEYPORE ECONOMIC AND INDUSTRIAL MUSEUM.

SEWELL, ROBERT. Chronological Tables for Southern India, from the Sixth Century, A. D. 4to. Madras, 1881.

MADRAS GOVERNMENT.

RAI, NAVINA CHANDRA. The Elements of Statics and Dynamics in Hindi.

PANJAB UNIVERSITY COLLEGE.

Records of the Geological Survey of India. Vol. XV, Pt. 1, 1881.

WARDLE, THOMAS. Handbook of the collection illustrative of the Wild Silks of India, in the Indian Section of the South Kensington Museum. with a Catalogue of the collection and numerous illustrations. 8vo. London, 1881.

REVENUE AND AGRICULTURAL DEPARTMENT.

HALM, CAROLUS; and MEYER, GULIELMUS. Catalogus Codicum Latino-rum Bibliothecæ Regiæ Monacensis, Vol. II, Part 4. 8vo. Monachii, 1881.

ROYAL LIBRARY, MUNICH.

VOSSION, LOUIS. Rapport sur la possibilité d'établir des relations commerciales entre la France et la Birmanie. 8vo. Paris, 1879. Pam.

SOCIÉTÉ ACADÉMIQUE INDO-CHINOISE DE PARIS.

United States Coast and Geodetic Survey. Methods and Results. The Currents and Temperatures of Bering Sea. 4to. Washington, 1882.

UNITED STATES COAST AND GEODETIC SURVEY.

PERIODICALS PURCHASED.

Benares. Fallon's New English-Hindustani Dictionary,—Part 8.

Berlin. Journal für die reine und angewandte Mathematik,—Vol. XCII, No. 1.

———. Sander's Ergänzungs-Wörterbuch der deutsche Sprache,—Parts 15 and 16.

Calcutta. Calcutta Review,—Vol. LXXIV, No. 148, April 1882.

———. Indian Medical Gazette,—Vol. XVII, Nos. 4-5, April and May, 1882.

———. Stray Feathers,—Vol. X, Nos. 1-3, 1881.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. VII, Nos. 3-4.

Göttingen. Gelehrte Anzeigen,—Nos. 11-18.

———. Nachrichten,—Nos. 4-8.

Leipzig. Annalen der Physik und Chemie,—Vol. XV, Nos. 3-4.

———. Beiblätter,—Vol. VI, No. 3.

———. Deutsche Literaturzeitung,—Vol. III, Nos. 3-11, 1882.

———. Hesperos,—Vol. I, Nos. 18-21.

———. Litterarisches Centralblatt,—Nos. 4-12.

- London. *Annals and Magazine of Natural History*,—Vol. IX, Nos. 50-51, February and March, 1882.
- . *Chemical News*,—Vol. XLV, Nos. 1164-1171.
- . *Entomologist*,—Vol. XV, Nos. 225-226, February and March, 1882.
- . *Entomologist's Monthly Magazine*,—Vol. XVIII, Nos. 213-214, February and March, 1882.
- . *Journal of Botany*,—Vol. XI, Nos. 230-231, February and March, 1882.
- . *Quarterly Journal of Conchology*,—Vol. I, No. 17.
- . *Journal of Conchology*,—Vol. II, Nos. 1-12; and Vol. III, No. 8.
- . *Journal of Science*,—Vol. IV, Nos. 93-99, February and March, 1882.
- . *London, Edinburgh and Dublin Philosophical Magazine*,—Vol. XIII, Nos. 79 and 80, February and March, 1882.
- . *Messenger of Mathematics*,—Vol. XI, Nos. 9-10, January and February, 1882.
- . *Nineteenth Century*,—Nos. 60-61, February and March, 1882.
- . *Numismatic Chronicle*,—Vol. I (3rd Series), No. 4.
- . *Publishers' Circular*,—Vol. XLV, Nos. 1068-1071.
- . *Society of Arts*,—*Journal*, Vol. XXX, Nos. 1530-1537.
- New Haven. *American Journal of Science*,—Vol. XXIII, Nos. 134 and 135, February and March, 1882.
- Paris. *Annales de Chimie et de Physique*,—Vol. XXV, March and April, 1882.
- . *Comptes Rendus*,—Vol. XCIV, Nos. 10-17.
- . *Journal des Savants*,—February 1882.
- . *Revue Archéologique*,—Vols. XXXIII-XLII.
- . *Revue Critique*,—Vol. XIII, Nos. 11-14, and 16-18.
- . *Revue des deux Mondes*,—Vol. L, Nos. 2-4; and Vol. LI, No. 1.
- . *Revue Scientifique*,—Vol. XXIX, Nos. 11-18.
- Philadelphia. *Tryon's Manual of Conchology*,—Part 13.

BOOKS PURCHASED.

- Parasara Smriti, with Madhavacharya's Commentary (Telugu characters). 4to. Madras, 1875.
- VIGNOLI, TITO. *Myth and Science: An Essay*. 12mo. London, 1882.
- YOUNG, C. A. *The Sun*. 12mo. London, 1882.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR JULY, 1882.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 5th July, at 9-15 P. M.

THE HON'BLE H. J. REYNOLDS, President, in the Chair.

The minutes of the last Meeting were read and confirmed.

The following presentations were announced :—

1. From the Meteorological Reporter to the Government of India,—Indian Meteorological Memoirs, Vol. I.
2. From the Revenue and Agricultural Department,—General Report on the Operations of the Survey of India during 1880-81.
3. From the Calcutta University,—Tagore Law Lectures, 1880. The Principles of the Hindu Law of Inheritance, by Rajkumar Sarvadhikari.
4. From the Secretary of State for India,—Hakluyt Society's Publications, Vols. 61, 63 and 64.
5. From the Home Department,—(1) Ashé Pyee, the Superior Country; or the great attractions of Burma to British Enterprise and Commerce, by Col. W. F. B. Laurie; (2) Archæological Survey of India Reports, Vol. XIII.
6. From the Authors,—(1) Latin and Greek Verse Translations, by C. D. Maclean; (2) Steinsculpturen aus Guatemala, by A. Bastian.
7. From the India Office,—Vinayapitakam, Vol. IV, by Dr. H. Oldenberg.
8. From the British Museum,—Catalogue of the Batrachia Salientia & Ecaudata in the collection of the British Museum. Second Edition, by George Albert Boulenger.
9. From Messrs. Trübner and Co.,—Catalogue of Dictionaries and Grammars, 2nd Edition.
10. From the Bengal Government,—Archæological Survey of India Reports, Vol. XIII.

11. From the Panjab Government,—(1) Appendix to "Changars" and Linguistic Fragments. Words and Phrases illustrating the Dialects of the Samé and Mé, as also of Dancers, Mirásis and Dòms, by Dr. G. W. Leitner; (2) Section I of Linguistic Fragments discovered in 1870, 1872 and 1879 by G. W. Leitner, LL. D., relating to the Dialect of the Magadds and other wandering Tribes, the argots of Thieves, the Secret Trade-Dialects and Systems of Native Cryptography in Kabul, Kashmir and the Panjab, followed by an account of Shawl-weaving &c., by Dr. G. W. Leitner.

The following gentlemen are candidates for ballot at the next meeting:—

1. The Hon'ble Moulvie Mohammad Yusuf, proposed by Moulvie Kabiruddin Ahmad, seconded by the Hon'ble Syad Amir Hussain.

2. Moulvie Serajul Islam, B. A., B. L., proposed by Moulvie Kabiruddin Ahmad, seconded by Moulvie Golam Sarwar.

3. Rajah Ram Narain Singh of Khyrah in Monghyr, proposed by Nawab Abdul Latif Khan, Bahadur, seconded by Pandit Prannath Saraswati.

DR. HOERNLE again exhibited the gold coin from Mahanada mentioned in the May Proceedings, together with a sealing wax impression of a duplicate belonging to Rev. J. Long, and read the following extracts from letters from General A. Cunningham, regarding them.

"I cannot make anything out of the gold coin with the Raja riding an Elephant. I have already got an impression of a similar coin, which belonged to Mr. J. Long, who took it to England. This coin also has all the letters clipped so that not one of them is readable with certainty. I will send you my impression." (26th May, 1882.)

"I now enclose the sealing wax impressions of Mr. Long's gold coin with the Raja riding an Elephant. I do not suppose that it is later than A. D. 400 or 500. It may therefore belong to one of the Gupta dynasty." (3rd June, 1882.)

"As well as I can remember the two seem to be the same. On the female side I think it is nearly certain that the inscription ends in *gaja*. Perhaps *Sri Simanta Gaja*—the last three letters being nearly certainly न गज. The Raja is driving his own Elephant—and he may have taken a title referring to his skill, in the same way that Samudra Gupta calls himself *Aprati-ratha*." (5th June, 1882.)

"I think that the legend on the female side begins with *Sri*— श्री * * * न गज. On the Elephant side this same title has perhaps been repeated, as I see the न letter. The letters in front of the Elephant seem

the most promising, गमनक *gomitaka*. The Elephant is drawn with much spirit—and I should like to know to what king we owe this fine coin." (15th June, 1882.)

Dr. Hoernle remarked that, so far as it was possible to judge from the impression of Mr. Long's coin, it seemed to be a duplicate of the Mahanada coin. He had not been able to learn where Mr. Long's coin was found; that and the Mahanada coin seemed to be the only two specimens of this kind known; and he thought an effort should be made to secure the Mahanada coin for the Society's collection. The general type of the coin certainly seemed to be Gupta; but the female figure appeared to be rather more Indo-Scythian than Gupta. He, therefore, thought that if the coin belonged to the Guptas, it should probably be assigned to one of the earliest kings of that dynasty; and if General Cunningham's new initial date of the Gupta era, 167 A. D., was correct, the coin may have to be assigned to as early a date as the 2nd or 3rd century A. D.

Babu P. N. Bose exhibited some earthen vessels discovered in a well (about 18 feet deep and covered above by some 15 feet of the allurium) at Mahesar and fragments of pottery, bones, teeth, freshwater shells, &c., found in the well and its vicinity, and read a note on the same. The vessels had their mouths directed downward; some were quite empty; others were filled partially or entirely with an indurated marl presenting a peculiar vesicular texture (the vesicles being lined with a brownish incrustation, probably the remains of decomposed cereal grains) and containing bones of birds and small mammals and bits of charcoal. Babu P. N. Bose concluded his note with speculations on (1) the antiquity of the well, (2) the purpose for which it was sunk, and (3) the cause of its infumation. The most eligible hypothesis that has presented itself to him about the *gharās* (earthen vessels) is that they were dedicated to the dead, with cooked cereals and meat and the ashes after cremation.

This note will be published in full in the Journal, Part I.

Mr Cockburn remarked that he regarded the stone implement referred to by Babu P. N. Bose as a natural water-worn pebble of quartzite which had been utilized as a rude chopper or hammer by man. Its chipped and battered edges were unequivocally of artificial origin. Specimens of the same type as that exhibited had been found by himself in the Banda District, and others very closely resembling it were described and figured by Abbott in his recent work on Primitive Industry (Boston, 1891). Of these the specimen figured at page 427, fig. 401, came nearest the Narbudda implement, but figures 24 and 130 were also not far removed.

With regard to the pottery exhibited, the clay vessels were perhaps of antique types, but it would not be safe to assert that these patterns were no

longer in use: the glazed fragment, however, tended to show that only the rudest vessels were selected for purposes of interment, and the shape of the vessels would not alone stamp the antiquity of the find.

With regard to their position in the wells, Mr. Cockburn was disposed to agree with the author that the vessels had been intentionally introduced into the wells. In the course of village inspection as an Opium officer during the season of 1880-81, which was a year of partial drought in the Banda District, Mr. Cockburn observed numerous wells literally choked with potsherds, the fragments of vessels that had either slipped from the line used for letting them down, &c., or which had broken by coming in contact with the sides of the well. Many of these wells only contained from 3 to 4 feet of water, and after a few hours' use a pile of potsherds became visible at the bottom at the portion of the margin corresponding to that most frequented at the mouth. He had often occasion to superintend the cleaning of these wells and had invariably found the pottery in fragments, sometimes in well defined layers.

The following papers were read—

1. *Folk-tales from the Upper Panjab.*—By REV. CHARLES SWYNNERTON,
M. R. A. S., Chaplain, Naushera.

(Abstract.)

This paper contains 30 short tales collected by the author from the peasantry of the Upper Panjab, and probably never hitherto printed. Most of the stories were told to the author at the little village of Ghazi on the Indus, thirty miles above Attock. This paper contains the shorter tales of the Series, consisting of fables and short stories, and is to be followed by another containing longer and more ambitious tales such as those in the "Arabian Nights."

This paper will be published in the Journal, Part I.

2. *Notes on the habits and instincts of some animals.*—By JOHN COCKBURN.

(Abstract.)

This paper describes the injuries inflicted on a cobra by a mungos, (*Herpestes auropunctatus*, Hodg.), which included the destruction of both fangs. The author proceeds to state his grounds for believing the destruction of the fangs to be a deliberate act of reason and not accidental.

An instance of the Crested serpent Eagle (*Spilornis cheela*, Lath.) destroying the maxillary bones of a snake is given, and the development of the specially protected tarse of *Circætes gallicus*, Gm., speculated upon.

The author observes that it would be of much interest if from questions of this kind we could discover how animals acquire their experiences.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR AUGUST, 1882.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 2nd of August, at 9.15 p. m.

The HON'BLE H. J. REYNOLDS, President, in the Chair.

The minutes of the last Meeting were read and confirmed.

The following presentations were announced:—

1. From the Muséum des Sciences Naturelles de Lyon,—Rapport sur les travaux exécutés pendant l'année 1881.

2. From the Curator, Government Central Book Depot, Bombay,—List of Sanskrit MSS. purchased for Government during the years 1877-78 and 1879-80, and from May to November, 1881.

3. From the Meteorological Reporter to the Government of India,—Report on the Meteorology of India in 1880.

4. From the Home Department,—(1) Selections from the Records of the Government of India, Home Department, No. 185; (2) Archaeological Survey Reports, No. XIV.

5. From the Authors,—(1) Notes on the Zoology of the Himalayan Districts of the North-Western Provinces, by E. T. Atkinson; (2) The Bombay National Mahomedan Association, by Shaik Hyder Cassim; (3) On a fossil species of *Camptoceras*, by Lieut.-Col. H. H. Godwin-Austen, F. R. S.

6. Ten small coins from the Deputy Commissioner of Chhindwara.

The following gentlemen duly proposed and seconded at the last meeting were ballotted for and elected Ordinary Members:

1. The Hon. Moulvie Mohammad Yusuf.
2. Moulvie Serajul Islam, B. A., B. L.
3. Raja Ram Narain Singh.

longer in use: the glazed fragment, however, tended to show that only the rudest vessels were selected for purposes of interment, and the shape of the vessels would not alone stamp the antiquity of the find.

With regard to their position in the wells, Mr. Cockburn was disposed to agree with the author that the vessels had been intentionally introduced into the wells. In the course of village inspection as an Opium officer during the season of 1880-81, which was a year of partial drought in the Banda District, Mr. Cockburn observed numerous wells literally choked with potsherds, the fragments of vessels that had either slipped from the line used for letting them down, &c., or which had broken by coming in contact with the sides of the well. Many of these wells only contained from 3 to 4 feet of water, and after a few hours' use a pile of potsherds became visible at the bottom at the portion of the margin corresponding to that most frequented at the mouth. He had often occasion to superintend the cleaning of these wells and had invariably found the pottery in fragments, sometimes in well defined layers.

The following papers were read—

1. *Folk-tales from the Upper Panjab.*—By REV. CHARLES SWYNNERTON, M. R. A. S., Chaplain, Naushera.

(Abstract.)

This paper contains 30 short tales collected by the author from the peasantry of the Upper Panjab, and probably never hitherto printed. Most of the stories were told to the author at the little village of Ghazi on the Indus, thirty miles above Attock. This paper contains the shorter tales of the Series, consisting of fables and short stories, and is to be followed by another containing longer and more ambitious tales such as those in the "Arabian Nights."

This paper will be published in the Journal, Part I.

2. *Notes on the habits and instincts of some animals.*—By JOHN COCKBURN.

(Abstract.)

This paper describes the injuries inflicted on a cobra by a mangos, (*Herpestes auro-punctatus*, Hodg.), which included the destruction of both fangs. The author proceeds to state his grounds for believing the destruction of the fangs to be a deliberate act of reason and not accidental.

An instance of the Crested serpent Eagle (*Spilornis cheela*, Lath.) destroying the maxillary bones of a snake is given, and the development of the specially protected tarse of *Circæus gallicus*, Gm., speculated upon.

The author observes that it would be of much interest if from questions of this kind we could discover how animals acquire their experiences.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR AUGUST, 1882.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 2nd of August, at 9-15 p. m.

The HON'BLE H. J. REYNOLDS, President, in the Chair.

The minutes of the last Meeting were read and confirmed.

The following presentations were announced:—

1. From the Muséum des Sciences Naturelles de Lyon,—Rapport sur les travaux exécutés pendant l'année 1881.

2. From the Curator, Government Central Book Depot, Bombay,—List of Sanskrit MSS. purchased for Government during the years 1877-78 and 1879-80, and from May to November, 1881.

3. From the Meteorological Reporter to the Government of India,—Report on the Meteorology of India in 1880.

4. From the Home Department,—(1) Selections from the Records of the Government of India, Home Department, No. 185; (2) Archaeological Survey Reports, No. XIV.

5. From the Authors,—(1) Notes on the Zoology of the Himalayan Districts of the North-Western Provinces, by E. T. Atkinson; (2) The Bombay National Mahomedan Association, by Shaik Hyder Cassim; (3) On a fossil species of *Camptoceras*, by Lieut.-Col. H. H. Godwin-Austen, F. R. S.

6. Ten small coins from the Deputy Commissioner of Chhindwara.

The following gentlemen duly proposed and seconded at the last meeting were ballotted for and elected Ordinary Members:

1. The Hon. Moulvie Mohammad Yusuf.
2. Moulvie Serajul Islam, B. A., B. L.
3. Raja Ram Narain Singh.

The following gentleman is a candidate for election :

Dr. A. Barclay, proposed by Major J. Waterhouse, seconded by Dr. H. W. M'Cann.

The SECRETARY read a letter from the Rev. K. S. Macdonald announcing that the Rev. Jagadiswar Bhattacharjya, the owner of the Mahanad coin referred to in the Proceedings for May and July, had been kind enough to present it to the Society. It appeared also that the Rev. J. D. Bhattacharjya had some years ago lent his coin to Mr. Long, who had sent it to General Cunningham for identification : so that it was the same coin as that of which General Cunningham had forwarded an impression, and was in consequence unique.

Dr. HOERNLE exhibited a remarkable birch-bark Manuscript, found at Bakhshálí, in the Yusufzai District, in the Panjáb, and made the following remarks :

"The MS. which I have the pleasure of showing to the Society this evening is a very remarkable one. It was found in a ruined enclosure, near Bakhshálí, a village of the Yusufzai District, in the Panjáb, by a man who was digging for stones ; and it was sent to me by the Panjáb Government, in order to be carefully examined and photographed. With the kind assistance of Major Waterhouse I had photographs of four leaves prepared at the Surveyor General's Office ; of which photographs I have also the pleasure of exhibiting a copy to-night. The MS. is written on leaves of birch-bark, which have become so dry by age as to be like tinder, and, unless very carefully handled, they crumble into pieces. Hence, unfortunately, by far the largest portion of the MS. was destroyed when the finder took it up ; and even the small portion that now remains is in a very mutilated state. With much care and trouble I have succeeded in separating all the leaves, and have found that 66 of them still remain, of none of which, however, much more than one half is preserved. For the purpose of reading and photographing them, I fixed them between two panes of glass ; and afterwards, for permanent preservation, I mounted each leaf separately between two pieces of 'talc.'

"The MS. is written in the so-called Sáradá characters, which are still used in Kashmir, and which, as they occur on the coins of the Mahárájas of Kashmir, are of a not inconsiderable age. Some of the forms, which very frequently occur in the MS., especially of vowels, very closely resemble the forms used in the Aśoka and early Gupta inscriptions. I have not observed those particular ancient forms in other MSS. written in the Sáradá characters, *e. g.*, in the Mahárpava MS. published in the Cambridge Palæographic Series. Hence I am inclined to look on them as an evidence of great age in the Bakhshálí MS. ; and as the West Indus Districts were

early lost to Hindú civilization through the Muhammadan conquests, during which it was a common practice to bury MSS. to save them from destruction, the Bakhshálí MS. may be referred to the 8th or 9th century A. D.

"I have looked over all the leaves of the MS. that remain, and have carefully read and transcribed about one-third. I have thus seen enough of the fragment to make sure that the whole of it treats of Arithmetic (including apparently Mensuration), though incidentally a few rules of Algebra are noticed. The latter refer to the solution of indeterminate problems (*kustaka*). The arithmetical problems are of various sorts; e. g., on velocity, alligation, profit and loss, etc. I may give one or two examples: thus "A and B run 5 and 9 *yojanas* a day respectively, and A is allowed a start of 7 days or 35 *yojanas*; when will A and B meet?" Or, "A and B earn $2\frac{1}{2}$ and $1\frac{1}{2}$ *dínaras* a day respectively; A makes a present of 10 *dínaras* to B; how soon will their possessions be equal?" An example of an algebraical problem is: "A certain quantity, whether 5 be added to it or 7 be subtracted from it, is a square; what is that quantity?" The solution, given in this case, is 11; for $11 + 5 = 16$ or 4^2 , and $11 - 7 = 4$ or 2^2 . The fragment, however, evidently does not contain the whole of the treatise on Arithmetic; for many subjects, commonly treated in Hindú arithmetical works, do not appear to occur in it; and this is confirmed by the numbers of the rules (or *sútras*, as they are called). The earliest numbered *sútra* that I have noticed is the 9th, and from internal evidence I conclude,—though the numbers are lost,—that the 7th and 8th rules are also preserved. The latest number I have met is the 57th.

"The method observed in the treatment of the problems is as follows: first a rule is given, introduced by the word *sútra*; next follow one, or more, examples, introduced by *tadā*, and stated both in words and in arithmetical notation; the latter is sometimes indicated by the term *sthāpna*; next follows a solution in words, which is always called *karana* "operation"; and lastly comes the proof, generally expressed in notation, and called *pratyáyana* or *pratyaya*. This method differs considerably from that used in other Hindú arithmetical treatises, e. g., in those of Bhāskara and Brahmagupta. The latter also use different terms; instead of *tadā*, examples are called by them *uddēśa* or *udāharana*; instead of *sthāpna* they have *nyāsa*; *karana* and *pratyáyana* or *pratyaya* are not used at all. The term *sútra* they employ occasionally, but in most cases they say *karana-sútra*; which latter term may contain a reference to a *karana*-work such as that in the Bakhshálí MS. There are, also, some differences in the method of notation as used in this MS. and as commonly established. Division is indicated by placing one quantity under another without a line

between them; e. g., $\frac{5}{8}$ ($= \frac{5}{8}$): multiplication, by placing one quantity beside the other; e. g., $\frac{5}{8} 32$ ($= \frac{5}{8} \times 32 = 20$): addition, by writing *yu* (abbreviated for *yuta* "added") before or after the additive quantity and placing the latter either *by the side of* or *below* the other quantity; e. g., 11 5 *yu* or 11 *yu* 5 ($= 11 + 5 = 16$): subtraction, by writing the negative sign + after the subtractive quantity and placing the latter beside or below the other quantity; e. g., 1 ($= 1 - \frac{1}{3} = \frac{2}{3}$), or 11 7 + ($= 11 - \frac{1}{3} +$

7 = 4). This negative sign is the most remarkable difference between the Bakhshálí MS. and the works of Bháskara and others. The MS. uses a cross + (exactly resembling our modern *plus*-sign), while the sign which is commonly used is a dot, placed above the quantity; e. g., 11 7 ($= 11 - 7 = 4$). I may add that the cipher is used (as in the *Lilávati*) to indicate an unknown quantity, the value of which is sought; e. g., $\begin{array}{c} 0 \ 5 \ yu \ m\acute{u} \ 0 \\ 1 \ 1 \qquad \qquad 1 \ 1 \ 1 \end{array} \left| \begin{array}{c} 0 \ 7 + \ m\acute{u} \ 0 \\ 1 \ 1 \qquad \qquad 1 \ 1 \end{array} \right|$

(for $\frac{x}{1} + \frac{5}{1} = \frac{y^2}{1}$ and $\frac{x}{1} - \frac{7}{1} = \frac{z^2}{1}$; here $x = 11$, $y = 4$, $z = 2$; *mú* abbreviated for *múlada* "square.") It is, however, also employed, in the usual way as the tenth figure of the decimal notation. A proportion is expressed thus: $\begin{array}{c} 1 \ 13 \ 30 \\ 1 \ 6 \ 1 \end{array} \left| \begin{array}{c} pha \ 65 \end{array} \right|$ (for $1: \frac{13}{6} = 30: 65$; *pha* abbrevia-

ted for *phalam*). All these peculiarities of method, terminology and notation, differing as they do from those in common use since the time of Brahmagupta (about 628 A. D.) and Āryabhaṭa (about 500 A. D.), whose mathematical treatises are the earliest known, tend to show that the work contained in the Bakhshálí MS. is more ancient than any of those I have just mentioned.

"There is another remarkable feature in the MS.; which points in the same direction, namely, the language in which it is written. This is what is now commonly called the Gáthá dialect, because it was first noticed in ancient Buddhist works (such as the *Lalitā Vistara*) written in verses or gáthás. The term, Gáthá dialect, however, is no more appropriate now, because that dialect is now known to be also used in ancient Buddhist works, which are partly written in prose, such as the *Mahāvastu*, of which M. Senart has just published an excellent edition. However that may be, it is generally admitted that this species of language is a very ancient one. It is a kind of ungrammatical Sanskrit, (judged, that is, by the standard of what is commonly called Sanskrit), interspersed to a large extent with ancient Prākṛit or Pāli forms. There is some dispute as to the exact origin, time and locality of this species of ancient irregu-

lar Sanskrit. But in all probability it was current in the early centuries just before and after the commencement of the Christian era, as a literary or cultivated form of the ancient Vernacular Prakrit of North Western India, in the countries to the east and west of the Indus, till it came to be superseded by the classical Pāṇinian Sanskrit. It is this language which is employed in the Bakhshālī MS. It would be out of place here to enter into philological details; but I may mention that the language of the MS. is marked by all the peculiarities in orthography, etymology, syntax, etc., of the so-called Gāthā dialect. The evidence of the language, then, would tend to show that the work contained in the Bakhshālī MS. must be ascribed, in all probability, to the earliest centuries of the Christian era, and further, since the Gāthā dialect has hitherto only been met with in Buddhist literature, to a member of the Buddhist community. If the latter supposition be correct, we should have in this MS. the first Buddhist Arithmetical work which, so far as I am aware, has hitherto become known.

There are, further, some specific points in the work contained in the Bakhshālī MS. which tend to point to a peculiar connection between it and the mathematical portion of the Brahma Sphuṭa Siddhānta, the famous astronomical work of Brahmagupta, which was compiled in 628 A. D. Thus an algebraical rule in the MS. occurs in strikingly similar language in Brahmagupta's algebra; again the foreign terms *dināra* (Latin *denarius*) and *dramma* (Greek *drachme*) occur in both, etc. The mathematical treatise in the Bakhshālī MS. is undoubtedly older than that of Brahmagupta; but what the exact connection between the two works may be, I am not as yet in a position to say. From the language, as already remarked, it would seem to follow that the Bakhshālī MS. contains a Buddhist treatise on arithmetic. All these are points which require further investigation, in which I am still engaged, and the results of which I hope to have a future opportunity of communicating to the Society. My present remarks are not intended to be more than a preliminary notice of the MS. In conclusion I will only repeat that the questions of the age of the MS. and of the work contained in it are entirely distinct; and that the date of the work is certainly very much earlier than the MS. copy of which a fragment has been found.

DR. HOERNLE exhibited a number of coins and clay figures, found at Toomluk and forwarded for inspection by R. H. Wilson, Esq., Collector of Midnapur. Amongst them there was a gold coin about which the subdivisional officer of Toomluk sends the following account:

"This coin was accidentally discovered in a pit five feet below the surface of the ground at the village of Shaurpur in thana Dehra. The place

of discovery was formerly the bed of the Cossye river: close to it is a tank at the excavation of which wrecks of a boat were found at a great depth from the surface of the ground, thus clearly indicating that the Cossye overflowed over the site of the tank. The pit itself was originally dug for the making of bricks: afterwards the villagers used to take the fine sandy earth from the pit for plastering houses. Dinabandhoo Mitter caught sight one morning of a glittering substance attached to the side of the pit. He took it out and, examining, it found it to be a gold coin. He fancied it to be a Ramchundri mohur (a gold coin of the reign of Rama) and regularly worshipped it. The coin was discovered about the time of the Dussera in the Bengali year 1275. It came to the notice of the undersigned in March last and Dinabandhoo was disabused of his belief that it was a mohur of the reign of Rama. It is clearly a Greek coin."

With regard to the last statement, Dr. Hoernle remarked that it was a mistake. The coin is not a Greek, but a Gupta, coin of *Kumāra Gupta*.

Obv. King on horseback. *Legend*, partially legible only: round the head of horse apparently *Kshatrapati*; under its legs: *Vijaya Kumāra*.

Rev. Nude, bejewelled female, sitting on "mórá" and feeding peacock: *Legend*, *Ajita Mahendra*.

Similar coins are figured and described in Prinsep's Indian Antiquities; see p. 385, (Vol. 1), Plate XXX, No. 3.

Of the other coins, one is of silver and is a specimen of the early Hindú punch-marked coins: see Indian Antiquities, Vol. I, p. 211; and Plate XX, Nos 25-29. The marks are probably Buddhist, the wheel and swastika being recognizable.

The rest which are of copper are all Buddhist, bearing distinct Buddhist symbols. Among them there are some similar to those found at Behat; see Indian Antiquities, Vol. I, p. 82 ff, p. 209 ff, Plates IV, No. 8, and XX, No. 39.

Obv. Full figure of elephant, referring to the story of Buddha's conception.

Rev. Conventional figure of *chetiya*.

Others are somewhat similar to the coins figured in Indian Antiquities, Plate XX, Nos. 50, 51.

Obv. Elephant within Buddhist rails; over him ornamental *svastika*.

Rev. Lion (representing Buddha as Śākya Simha); in front *bodhi* tree; over him, common *svastika*.

There is another to which there is none in the Indian Antiquities exactly like; but cf. Plate XX, Nos. 37, 48.

Obv. Elephant.

Rev. Stag or deer; one of the commonest *jātakas* of Buddha.

Others, again, are like the coins figured and described in Indian Antiquities, Pl. IV, 22 and Pl. XIX, 18.

Obv. Elephant, standing over *toran* and *svastika*, and fronting *chetiya*.

Rev. *Bodhi* tree; cross; *chetiya* and *triratna*.

Among these, there are some which differ in the relative position of the symbols with regard to the two sides.

Obv. Elephant, over Buddhist rails, fronting Buddhist *toran*; over him *svastika* and *chetiya*.

Rev. Various Buddhist symbols: *bodhi* tree, *svastika*, *chetiya*.

Or: *Obv.* Elephant, fronting Buddhist *toran* (above) and *svastika* (below); over him cross.

Rev. *bodhi* tree, *Chetiya*, *triratna*, *toran*.

These coins were not struck, but cast, as shown by their shape, which still shows marks of the mould.

There are also five early Hindú punch-marked coins; but the marks are indistinguishable; one is square; the others round. See the specimens in Indian Antiquities, Vol. I, Plate XX.

Lastly there is one copper Indo-Scythian *Kanerki*, like those figured and described in Indian Antiquities, Vol. V, Pl. VI, 30, Pl. XXI.

Obv. Standing figure of king *Kanerki*; just distinguishable.

Rev. Indistinguishable.

There is also one brass Chinese coin of the Manchu Tartars. See Marsden's Numismata Orientalia, p. 829, No. MCCOXIX; and Plate LVI, Nos. MCCXCIX and MCCOXIX.

Dr. Hoernle read the following letter from General Cunningham regarding the gold Gupta coin:

"I have compared your coin of Kumára Gupta with three specimens in my possession, and I make out the following:

? *bhupati rájati Vijaya Kumára Gupta*,
the *pt* being *tp*. On the reverse the legend is simply

Ajita Mahendra.

"We have Horseman coins of Chandra Gupta with the reverse title of *Ajita Vikrama*. Now we know that Chandra Gupta bore the title of *Sri Vikrama*. I infer therefore that, as Kumára Gupta certainly bore the title of Mahendra (see his silver coins *Sri Kumára Gupta Mahendrasya*), the gold coins with the title of *Ajita Mahendra* must certainly belong to him. The present gold coins with the Horseman obverse, and the goddess Kumára Devi on the reverse, confirm this attribution as they give the name of Kumára Gupta under the horse quite distinctly."

"The gold coins of the Guptas require to be carefully re-examined. I have several unpublished specimens some of which certainly belong to the later Gupta dynasty, which ruled from about 500 to 750 A. D. I return the coin of Kumára Gupta enclosed."

Dr. Hoernle remarked, that what General Cunningham read [*gu*] *pta bhūpati*, he had read as *kshatrapati* or *kshitipati*; but he admitted that the letters were sufficiently worn to admit of various interpretations. Immediately preceding the word which he read as *kshitipati*, there were three letters the last of which was distinctly *ja*, and the whole of which he was inclined to read as *Srī rāja*, so that the whole legend would run: *Srī rāja kshitipati rājati Vijaya Kumāra*. After *Kumāra* there might have been the word *Gupta*, as the rim of the coin at that place was very much worn; but no trace of its letters remained.

With regard to the figures Dr. Hoernle read the following note by Dr. R. Mitra:

"As regards the terracotta figures the only one of interest is the female head with a profusion of ornaments. The ornaments are the counterparts of what we see on the Sanchī, Bharat and Buddha Gaya gateways, but quite unlike more recent sculptures. I am disposed therefore to assign a Buddhist origin and very early date (about the first three or four centuries of the Christian era) to the relics."

Dr. Hoernle exhibited 10 silver coins, presented to the Society by J. W. Tawney, Esq., Deputy Commissioner of Chhindwara. He remarked that the coins were of a well-known kind, and were variously called "*Sāha*" or "*Surāshtra*" or "*Satrap*" coins. Similar coins (sent by Mr. Rivett-Carnac for inspection) have been before the Society not long ago, when they were described by Dr. R. Mitra. It would suffice therefore, this time, merely to state the names of the rulers to whom the present coins must be ascribed, and to refer to Prinsep's *Indian Antiquities* and E. Thomas's *Dissertation in the Archæological Survey of Western India* (pp. 44 ff.) where they will be found fully described and figured.

No. I are three coins of *Rudra Sena* the son of *Vīradāma*; see *Indian Antiquities*, Vol. II, p. 85, fig. 5. Two of them show faint numerals which General Cunningham reads as 187.

No. II are three coins of *Atridāma*, the son of *Rudra Sena*; see *ibid.*, fig. 8.

No. III is a coin of *Dāma Jāta Srī*, the son of *Rūdra Sena*. So the name is read by General Cunningham who says that these coins are rare. They are not noticed in the *Indian Antiquities*.

No. IV is a coin of *Viśva Sāh*, the son of *Atridāma*; see *ibid.*, fig. 9.

No. V is a coin of *Vijaya Sāh*, the son of *Dāma Sāh*. See *ibid.*, fig. 3.

No. VI is a coin the names on which are illegible.

Dr. Hoernle exhibited three clay-seals, which had been found at Sunat and sent by Carr Stephen, Esq., and read the following note on them by Dr. R. Mitra:

"The seals I read—

No. 1. *Srissama Guptasya*.

No. 2. *Rati mutta*.

No. 3. *Tega sinha*.

The first is your reading. I explain the double *s* by splitting the words thus: *Srī* auspicious epithet, *Ṛs-sama* equal (*sama*) to the Lord (*Ṛs*).

The second means "he who has got rid of concupiscence," from *rati* "concupiscence," and *mukta*, "free from."

In the third the nasal is not an anusvāra, but the nasal of the first group of letters *ṣ*."

MR. COCKBURN brought before the Society an interesting case of Polydactylism in a horse, observed by him in the streets of Calcutta.

"The animal was a black pony about 11 hands high, with a second toe developed on each fore leg. The inner metacarpal of the manus, corresponding to digit number 2 of the typical mammalian five-fingered hand, bore a long supernumerary hoof, which must have interfered to some extent with the animal's movements. He had ascertained by digital examination that the supernumerary digits were composed of the usual number of bones, *viz.*, a proximal median and distal phalanx, and that the articulations possessed a certain amount of mobility. The hind limbs did not show any external indications of abnormal development. Unfortunately he could only make a very hurried examination, and has not been able to trace the animal since.

"Polydactylism in the horse would not appear to be of common occurrence in India. Mr. Wood-Mason had previously recorded an instance in the Proceedings of the Society for January 1871, (page 18, plate I,) and the preparation described by him formed one of the most interesting objects in the Mammal Gallery of the Indian Museum. The development of the existing Equines which are monodactyle out of polydactyle Hippotheroid ancestors is now as widely known as the Darwinian theory itself, and affords an excellent popular illustration of that theory. The researches of Professor Marsh in America had thrown much light on the subject. The extinct polydactyle Hippotheroids alluded to were *Orohippus*, *Meohippus*, *Anchitherium* and *Hipparion*, which formed a perfect gradation from a four toed to a single toed horse."

Mr. Wood-Mason remarked that this was a kind of monstrosity of which many instances had been brought forward, and the significance of which had been many years ago pointed out by himself, and since very fully explained by Professors Huxley and Marsh in connection with their researches in the Natural History of extinct Horses; and that the present

instance of it was well worthy of being briefly recorded in the Proceedings, although no anatomical examination had been possible.

The following papers were read—

1. *On new and little-known Mantodea.*—By J. WOOD-MASON.

This paper contains descriptions of the following new species: *Chœradodis brunneri*, *Tarachodes insidiator*, *Tarachodes dissimulator*, *Gonypeta aurbæmon*, *Hierodula* (*Sphodromantis*) *arabica*, *Hierodula* (*Sphodromantis*) *muta*, *Hierodula sternostieta*, *Mantis callifera*, *Iris orientalis*, and *Polyspilota insignis*. Other species described are the following: *Amorphoscelis annulicornis*, *Eremophila arabica*, *Didymocorypha ensifera*, *Episcopus chalybeus*, *Dysaulis longicollis*, *Euchomena thoracica*, *Hierodula* (*Sphodromantopoda*) *quinquedens*, *Hierodula* (*Sphodromantis*) *bicarinata*, *Hierodula* (*Rhombodera*) *atricoxis*, var. *grandis*, *Hierodula* (*Rhombodera*) *flava*, *Hierodula* (*Rhombodera*) *basalis*, *Mesopteryx alata*, and *Mesopteryx platycephala*.

2. *Note on the Páli Grammarian Kachcháyana.*—By LIEUT.-COL.

G. E. FRYER, M. S. C., *Burma Commission.*

The Páli referred to in this paper is the language in which the sacred literature of the Buddhists of Burma and Ceylon is written.* It is found inscribed on palm leaves in the characters of the vernacular speech peculiar to those countries. *Mágadha-bhásá*, or *Mágadhí*, is the appellation given to it by the native writers, who assert it to be the original language, as will be seen from the subjoined stanza from *Rúpasiddhi*, II, 1, the authorship of which has hitherto been unknown:

sá mágadha-múla-bhásá nará yáy' ádikappiká

brahmáno eh' assutálápá sambuddhá chápi bhásare

which may be rendered thus—"that by which men of former ages, Brahmas, and such as had never heard speech, expressed themselves, is the original *Mágadha* language."

With regard to the question what this Páli is, I cannot do better than refer to the remarks of that distinguished orientalist Dr. Muir, on the Páli, its early introduction into Ceylon, and its relations to Sanskrit and Prákrit, in the 2nd Volume of his *Sanskrit texts*, pp. 56-73, 104, 108, 109 (second edition).

The use of the *e* for *o*, peculiar to the dialect employed in the pillar inscriptions which resembles the *Mágadhí* of Dhauli, is common to the Páli; for, in the 85th aphorism of chapter XX of the *Sadda Níti*, mention is made of this peculiarity: thus, *ti-lingato tháne si-yonam e*, "in the three genders *e* instead of *si*, *yo*," i. e., in the nom. sing., and nom. acc. plural; as,

* The word *páli* signifies a line or row: a sacred text.

vanappagumbe for vanappagumbo, 'the forest shrub,'
 sukhe dukkhe for sukham dukkham, 'health and sickness,'
 viratte kosiyañane for virattā kosiyañanī, 'the impassible kosiya-
 brahminess.'

[cf. Clough's Gr., p. 15. Cowell, p. 180, aphorisms 10-13, chap. XI, Var.].

I think it may be affirmed that the Pāli of Ceylon and Burma is the language Buddha used in Māgadha; but, from having been arrested in its downward course, and preserved from the prevailing corrupting influences of vernacular use, it differs from the modern Māgadhi, and from the dialect employed in the pillar inscriptions which resembles the Māgadhi of Dhāuli.

There are extant in Burma and Ceylon several grammatical treatises upon the Pāli language, which may be said to represent two different schools. The one is represented by the grammar of Kachchāyana; the other by the grammar of Moggallāna.

Moggallāna, the representative of the more modern schools, flourished in Ceylon during the reign of Prākrama Bāhu I, circa 1153-1186 A. D. He was also the author of a Pāli dictionary, or rather vocabulary, entitled the Abhidhāna, after the model of the Sanskrit Amarakośa. On entering the priesthood, he dropped his patronymic, and assumed the name of Saṅgharakkhita Thera, 'The Protected of the Congregation,' under which title he wrote four treatises, the first two of which are in verse:—viz., Subodhāṅkāra, 'Easy rhetoric,'

Vuttodaya, 'Exposition of Metre,'

Sambandhachintā, 'Reflections on relation (of cases),'

Khuddasikkhā ṭīkā, 'a gloss in prose on Dhammasiri's "Minor duties (of a priest)."'

He dedicates the last of these to the learned priest Sāriputta, and the second to Sīla Thera. They probably represent one and the same person. The treatises on Rhetoric and Metre are merely adaptations from Sanskrit works on the same subject, viz., Sābitya-Darpana and Vṛttaratnākara, and his grammar exhibits similar indications of having been formed upon a Sanskrit model.

There are several points of difference, both in substance and arrangement, between this grammar and Kachchāyana's work; for instance, Moggallāna affirms that there are ten and not eight vowels in the Pāli alphabet, thus increasing the number of the letters from forty-one to forty-three. Again, the book on case relation (kāraṇa) is excluded from the grammar, and made the subject of a separate treatise. The grammar contains 1,043 aphorisms arranged under seven books as follows:—

| | Name of Book. | Subject. | No. of Aphorisms. |
|---|----------------|--|-------------------|
| 1 | Sandhi, | euphonic combination. | 58 |
| 2 | Syādi 1, | { words simple, and compound. | 243 |
| 3 | Syādi 2, | | 115 |
| 4 | Nādi, | secondary affixes (<i>taddhita</i>). | 142 |
| 5 | Khādi, | primary affixes (<i>kita</i>). | 179 |
| 6 | Tyādi, | verbs. | 78 |
| 7 | Nvādi, | affix of <i>ṇu</i> , etc. | 228 |
| | | | Total, 1048 |

The same writer has left behind a large commentary on this work. Ananda, otherwise called Piyadasi, a pupil of Moggallāna, has produced an abridgment of his master's work called Padasādhana, which he dedicates to Moggallāna under his priestly titles of Sangharakkhita Thera, and Medhankāra of Udumbaragiri, (the glomerous fig tree hill).

The other and somewhat older school is represented by the grammar ascribed to Sāriputta Mahā Kachchāyana. It is called in Burma the eight-book-grammar of Mahā Kīsi, and contains 675 aphorisms. In his 'Kachchāyana Specimen,' [Halle, 1869,] M. Kuhn inserts, between the 13th and 14th aphorisms in the third (Kāraka) book, an additional one, and the Nyāsa introduces into the Kāraka book four others, all of which are represented in the Kāraka book of the Kātantra, though none of them appear in Kachchāyana, nor in any commentary upon it. The 675 aphorisms are thus arranged under eight books:—

| | Name of Book. | Subject. | No. of Aphorisms. |
|---|-----------------|-----------------------|-------------------|
| 1 | Sandhi, | euphonic combination. | 51 |
| 2 | Nāma, | nouns. | 221 |
| 3 | Kāraka, | case-relation. | 45 |
| 4 | Samāsa, | compound words. | 28 |
| 5 | Taddhita, | secondary affixes. | 62 |
| 6 | Akhyāta, | verbs. | 118 |
| 7 | Kita, | primary affixes. | 100 |
| 8 | Upādi, | Up affixes, etc. | 50 |
| | | | Total, 675 |

According to native tradition, Kachchāyana, also called Sāriputta,* pursuant to the declaration of Buddha that 'sense is represented by letters,' proceeded with Buddha's permission to Himavanta and there composed this grammar,† which, from this reputed origin, is considered sacred. It is to be found in every monastery in Burma. The arrangement of the work is irregular. The aphorisms follow each other without any regard to system. As in Sanskrit grammars, the rules are given in the form of concise aphorisms or sentences hanging together like threads (*suttas*): the right understanding of which chain of rules depends upon a knowledge of the *adhikāra*, or heading rule, and its influence on those that follow; thus Kachch. Nām. 2. 12. *itthipumanapumsuka-sankhyam*, '(the rules about to follow relate to) nouns of number (and are alike applicable to the three genders) masc., fem., neut.' is a heading rule, which is said to exercise an authority over other aphorisms, inasmuch as these heading rules consist of terms which other aphorisms, in order to complete their sense, are under the necessity of borrowing. They are said to be of three kinds, namely, *sīhagatika* 'lion's gait' (applied to the habit of constantly pausing and looking back, *pubbaparavilokanuto*); *maṇḍukagatika* 'frog's leap' (the passing over, or skipping of, several aphorisms and supplying from a previous aphorism); *yathānupubbika* 'in regular or successive order.' As brevity is regarded as a primary requisite, the following abbreviations are resorted to in the aphorisms. A word in the genitive case is generally governed by *thāne* understood (i. e., *instead of* such a word or letter another is to be used); a word in the ablative by *param* (i. e., *after* such a word or letter, etc.); a word in the instrumental by *saha* (i. e., *together with* such, etc.); a word in the locative by *pare* understood (i. e., *when such a word or letter follows*, the rule refers to that which immediately precedes it); [cf. Cowell, pp. xvii—xviii]. *Vā* signifies 'option,' of which there are two kinds; namely, *vikappa*, the allowing a rule to be observed or not at pleasure, optionally enforced: and *vavatthita-vibhāsā*, a fixed option, or one applicable throughout, the prescribed operation being in the one case carried out throughout, and in the other omitted throughout.

There are several commentaries on Kachchāyana's work, of which the most important are, the *Nyāsa* or *Mukbamattadīpanī*, by *Vimalabuddhi*, an enlarged counterpart of Kachchāyana, but with five additional aphorisms in the 3rd (or *kāraka*) book, which are to be found in the *Kātantra*; the

* So called in a Talain work called *Mālamāle*. In the commentary on the *Rūpasiddhi*, Buddha is said to have selected Sāriputta Kachchāyana to elaborate the rules of grammar propounded by him. (Mahā. xxvii)

† *Suttaniddesa* by Chappada saddhammajoti-pāla at Pagan in A. D. 1279 during the reign of king Kyau-tawā.

Rūpasiddhi, by *Dīpankara*, otherwise called *Buddhapiya*, a clear and well arranged digest of the grammar in seven books, the last two books of the grammar being joined into one; the *Bālāvatāra* by *Dhammakitti*, a compendium also in seven books, of which the third (or *kāraka*) book is placed last, and divided into two chapters; lastly, the *Saddaniti*, a prolix and bulky volume containing twenty-five books, divided into four parts (*māla*),—*linga m.*, *dhātu m.*, *vuddhi m.*, and *sutta m.*; the aphorisms are styled *lakkhaṇas* (rules). It is a comparatively modern work, having been composed by *Aggavaṃsa Thera* at Pagan during the reign of king Kyautswa, A. D. 1279—1298.

It has long been suspected by Pāli scholars that the Pāli grammar of Kachchāyana is based upon the Kātantra, a Sanskrit grammar of about the tenth century A. D. I see no reason to doubt this; for, it seems to me, no one, who has examined the native treatises belonging to this school, can help arriving at this conclusion.

The author of the Rūpasiddhi, in his comment on *parasamaññā payoge* (Kachch. I. 9) says that Kachchāyana adopts certain grammatical terms to be found 'in Sanskrit, or in the works of other grammarians:—one of those terms is *linga*, which, in its usual sense, means 'gender, sex'; but, as the same writer has it, in his comment on *lingatthe pathamā* (Kachch. III, 15) *idha, pātipadikā paranāmadheyyam*, 'in this grammar (it is) another term for (the Sanskrit) *prātipadikā*,' i. e., the crude form or base of a noun. Subjoined are given the rulings on this term in Pāṇini, the Kātantra, and the Pāli grammars:—

arthavad adhātur apratyayaḥ prātipadikam. Pāṇ. I. 2. 45.

dhātuvibhaktivarjam arthaval lingam. Kāt. Nām. 1.

dhātupachchayavibhattivajjitassa atthavato saddassa 'parasamaññā payoge' ti paribhāsato lingasaññāyam. Rūp. Nām. 2.

dhātupachchayavibhattivajjitam atthayuttam saddarūpam lingam nāma.

Bālāv. p. 8, l. 20. [Senart, p. 34.*]

dhātupachchayavibhattivajjitam atthavaṃ lingam. Sad. Nīti. ch. xx. 5.

Hence, we see, as M. Kuhn justly remarks, that amongst the Kātantras, and in Kachchāyana's grammar, the word *linga* has the same signification, a nominal base. But there are numerous other instances of agreement between the aphorisms of Kachchāyana and those of the Kātantra; indeed, in the Kāraka book nearly every aphorism has a greater or less similarity with those in the same book in the Kātantra. To take for instance the first aphorism of the Kāraka book of Kachchāyana, and the corresponding (eighth) aphorism of the same book in the Kātantra:—

KACHCHĀYANA.

1. yasmād apeti bhayaṃ ādatte vā tad apādānaṃ.

Comm. yasmā vā apeti yasmā vā bhayaṃ jāyate yasmā vā ādatte taṃ kārakaṃ apādānasaññaṃ hoti.

KĀTANTRA.

8. 'yato 'paiti bhayaṃ ādatte vā tad apādānaṃ.

Comm. yasmād apaiti yasmād bhayaṃ bhavati yasmād ādatte vā taṃ kārakaṃ apādānasaṃjñāṃ bhavati.

It is evident from this, as M. Senart says, (p. 125)* that the author of the Pāli aphorism must have had before him not only the text of the Kātantra ruling, but even the commentary of Durgasinha upon it.

Again, *Pancamī* and *Sattamī* for the Imperative and Potential moods are terms peculiar to Kachchāyana and the Kātantras (v. Kāt. Kār. 18 and 20.) The Bālavatāra explains that they are 'the terminology of former teachers,' and Sadda Nīti states that those terms are 'in accordance with Sanskrit grammars such as the Kātantra.' [D'Alwis, Cat. p. 61.]

We may infer, therefore, from his having the Kātantra before him, that the author of Kachchāyana's grammar did not live prior to the tenth century A. D.

It may be accepted as an historical fact that Buddhaghosa, bearing the Buddhist scriptures from Ceylon, came to Thāhtun, which is situated a few miles north of Martaban, and which was then the capital city of one of the Talaing states. The year given for his arrival in the histories is A. D. 403, but probably he came within the period included in A. D. 410—432. At this time there does not appear to have been much intercourse between the Talaings and Burmese. Buddhism was in a very corrupt state. We read of no effort being made to disseminate copies of these scriptures, and the Burmese people in the central Irrawaddy country appear to have remained isolated for some centuries.

About six hundred years after, in the early part of the eleventh century A. D., the great hero of the later Burmese history, Anaurahtá, ascended the throne, and restored the ancient power of the Burmese monarchy. That this king conquered Thāhtun, and procured the Buddhist scriptures from thence, cannot be doubted. His reform of religion is minutely and graphically described. He reigned forty-two years.†

About seven years after the death of Anaurahtá, certain Malabar princes invaded Ceylon, and obtained sovereignty over the island for twelve years, viz., 1059—1071 A. D. They were the most determined foes of Buddhism, and are stated to have systematically effected the destruction of all the sacred books they could lay hands on. These were afterwards replaced from Burma.

* Separate edition. Paris, 1871.

† Cf. History of the Burma race, by Sir A. P. Phayre, J. A. S. B. 1863, pp. 105, 106.

It has been satisfactorily proved by D'Alwis that Kachchāyana's grammar was not known to Buddhaghosa; he makes no allusion to it, nor is there any agreement between the terminology of Buddhaghosa and Kachchāyana. The Burmese acknowledge that they received it from Ceylon, and since it appeared after Buddhaghosa, it must have been composed subsequent to the date of the destruction of the sacred books in 1071 A. D., *i. e.*, towards the close of the eleventh century. But for many years the island was torn by internal dissensions, and it was not until the close of the twelfth century, during the reign of king Parākrama Báhu I, a monarch who is styled "the most martial, enterprising, and glorious in Sinhalese history", that a new impulse was given to Pāli grammatical literature, and that we hear the names of the earliest disciples of Buddha revived in the persons of eminent priests, whose literary tastes found encouragement under that enlightened monarch.

Thus the founders of the two schools of Pāli Grammar assumed respectively the names of the right and left hand disciples of Gotama, *viz.*, Sāriputta, and Moggallāna. This may have given rise to the tradition that Kachchāyana's grammar was written about 500 years before the Christian era.

It is probable that Sāriputta was some years older than Moggallāna, as the latter acknowledges his obligations to the former as his preceptor, and dedicates some of his works to him. It is true that the dedication might have been made in honour of the memory of some eminent priest of ancient times, yet the fact remains that the first distinguished priest, bearing that name, of whom mention is made subsequent to the age of the Kātantras, is Sāriputta, the author of the Vinaya-saṅgha and other works, and the contemporary of Moggallāna.

It is hoped that the foregoing statements will prove to the reader that the Pāli grammar of Kachchāyana is based on the Kātantra, and that Kachchāyana lived in or about the twelfth century of the Christian era.

A list is appended of some of the treatises, on grammar, rhetoric and prosody, which are to be found in the monasteries of Burma.

| No. | Probable date. | Name of Treatise. | Reputed author. | Reputed place of abode. | Reigning Sovereign. | Authority. |
|-----|----------------|-----------------------------------|------------------------|-------------------------|---------------------|---|
| 1 | | Kachchāyanaṇṇapākarapaṇṇa. | Kachchāyana. | Ceylon. | Parākrama Bāhu I. | Pipaka traditions or chronicles called in Burmese 'Pitakat thā-maṇi tsa,' |
| 2 | | Nettipakaraṇapaṇṇa | " | " | " | Sāsanaṇṇakāra. |
| 3 | | Chūla Netti. | " | " | " | Pit. trad. |
| 4 | | Petakoṇḍa. | " | " | " | D'Alwis Catalogue. |
| 5 | | Netti-aṭṭhakatha. | Sāriputta. | " | " | Pit. trad." |
| 6 | | Vinayasangaha. | " | " | " | " |
| 7 | | Sāratthadīpanī. | " | " | " | " |
| 8 | | Anguttara-tīkā. | Rassathera. | " | " | " |
| 9 | | Kachchāyana Sāra. | " | " | " | " |
| 10 | | Kachchāyana līlāda. | Vimalabuddhi. | " | " | " |
| 11 | | Nyāsa, or Mukhamatṭa dīpanī. | Buddhepiya. | " | " | " |
| 12 | | Paddarūpasiddhi. | Dhammikaṭṭa. | " | " | " |
| 13 | | Bālavatāra. | Buddhādātta. | " | " | " |
| 14 | | Rūpatāra. | Moggallāna. | " | " | " |
| 15 | | Moggallāna vyākaraṇa. | " | " | " | " |
| 16 | | " vutti. | " | " | " | " |
| 17 | | Abhidhanapadīpikā. | " | " | " | " |
| 18 | | Subodhāṇṇakāra. | Sangha rakkhita thera. | " | " | " |
| 19 | | Vuttodaya. | " | " | " | " |
| 20 | | Sambandhachinīsa | " | " | " | " |
| 21 | | " nissaya. | " | " | " | " |
| 22 | | Netti. | Vachī Rassa thera. | " | " | " |
| 23 | | Gandhabharaṇa | " | " | " | " |
| 24 | | Padusādhana. | Ānandapiyadasī. | " | " | " |
| 25 | | Netti-aṭṭhakatha. | Dhammapāla. | " | " | " |
| 26 | | Netti-tīkā. | " | " | " | " |
| 27 | | Itivutṭa. | " | " | " | " |
| 28 | | " aṭṭhakatha. | " | " | " | " |
| 29 | A. D. | Chhappachchaya. | Saddhamma Ňāṇa. | Pagan. | Kyātsavā. | Pit. trad. |
| 30 | 1227 | Chhandosaratthā vikāsinī. | " | " | " | " |
| 31 | " | " | " | " | " | " |
| 32 | " | Chhando. | " | " | " | " |
| 33 | " | Kālapa. | " | " | " | " |
| 34 | " | Vibhāttayāttha. | " | " | " | " |
| 35 | " | Kālapa-vachanattajotikā vikāsinī. | " | " | " | " |
| 36 | " | Vachhanattajotikā. | Vopulla. | " | " | " |
| 37 | " | " | " | " | " | " |

[1877.
Vuttodaya, J. A. S. B.

| No. | Probable date. | Name of Treatise. | Reputed author. | Reputed place of abode. | Reigning Sovereign. | Authority. |
|------|----------------|--------------------------|-------------------------|-------------------------|-------------------------|------------------------|
| 38 | " | Sadda binda. | King Kyālawā. | " | " | Sāsana. |
| 39 | " | Saddābhuta. | " | " | " | " |
| 40 | " | Saddā kṛunkhāyā. | " | " | " | " |
| 41 | " | Sambandhachini, ti tīkā. | Abhaya thera. | " | " | Pit. trad. |
| 42 | " | Vuttodaya tīkā | Nava Vinayabuddhi. | " | " | " |
| 43 | " | Saddattha bheda chintā. | Saddhamma Siri. | " | " | " |
| 44 | " | " | Abhaya thera. | " | " | " |
| 45 | " | Kārikā. | Dhamma Sena. | " | " | " |
| 46 | " | Kārikā tīkā. | " | " | " | " |
| 47 | " | Akkhara kosalla. | Saddhamma Nitthi. | " | " | " |
| 1279 | " | Vuttodaya nissaya | Saddhamma Mahādharmma | " | Kyau-tswā. | " |
| 49 | " | Abhidhāna nissaya. | Nāpāra. | " | " | " |
| 50 | " | Suttaniddesa. | Chhappado Saddhamma jo- | " | " | Pit. trad. |
| 51 | " | Balaratara tīkā | Uttama thera. | " | " | Sāsana. |
| 52 | " | Saddanīti. | Aggavagga thera. | " | " | " |
| 53 | " | Sadda vutti. | Saddhamma. | " | " | " |
| 54 | " | " | Sāriputta. | " | " | " |
| 1298 | " | Sankhyāpakāsa tīkā. | Nāpavīlāsa. | Pānya. | " | Sāsana and Pit. trad. |
| 56 | " | Upadesandhi. | A Shan priest, name un- | " | Shan interregnum. | Pit. trad. |
| 57 | " | Mukhamatā Sāra. | Gaṇasāgara thera. | " | " | " |
| 1312 | " | Vāchanapadesa. | Saddhamma gura. | Pānya. | Thibathū Ta-tsi-shong. | Sāsana. |
| 59 | " | Vachcharāvacchaka. | " | " | " | Pit. trad. |
| 60 | " | Nirutti māyūśā. | " | " | " | " |
| 1342 | " | Kachchāyana vāṇṇanā. | Mahā jīvita. | " | Kyantswā. | " |
| 62 | " | Saddattha jālinī tīkā. | Nāgita. | " | " | " |
| 63 | " | " | " | " | " | " |
| 64 | " | Abhidhāna tīkā. | Chaturangabala thera. | " | " | Sāsana. |
| 1367 | " | Sumbandha (6 in number). | Dakkhīnāvagga. | " | " | Pit. trad. |
| 66 | " | Kavisāra. | Dhammananda. | Ava. | " | Sāsana. |
| 67 | " | " | Buddha dhātā. | " | " | Pit. trad. |
| 1422 | " | Sadda nissaya. | Aggadharmma-lankāra. | " | Meng kyī tswā. | " |
| 1426 | " | Kachchāyana-sāra tīkā. | Sirisaddhamma-vilāsa. | " | " | Pit. trad. |
| 70 | " | bheda tīkā. | Arīyavagga. | " | " | Vuttodaya, J. A. S. B. |
| 71 | " | " | Silavagga. | " | " | " |
| 1442 | " | Netti nissaya. | Puppha thera. | " | Thibathū Tshengbyashong | Pit. trad. |
| 72 | " | Netti tīkā. | Sānava. | " | Mong-ula-ngai. | " |
| 73 | " | Sadda-netti. | Dakkhina tsayā. | " | Mongrai kyan tswā. | " |
| 1501 | " | Kachchāyana nissaya. | Pachchinnā tsayā. | " | " | " |
| 75 | " | Nyāsa tīkā nissaya. | Ittioung Phāla. | " | " | " |
| 76 | " | Atirappanā. | " | " | Tho han bwa. | Pit. trad. |

NOTE.—It will be seen that, according to the Sāsana-lankāra, Kachchāyana is the reputed author of the *Netti-aṭṭhakathā*, whereas the Pika traditions assign the authorship to Dhammapāla.

Dr. Hoernle remarked that he had listened with great interest to Col. Fryer's paper, but he could not say that his arguments had convinced him. Col. Fryer's position was, that the well-known grammar of *Kachcháyana* was composed about the 12th century of the Christian era by a Ceylonese priest, called *Sáriputta*. But the Ceylonese themselves ascribed to the grammar an Indian origin. Col. Fryer said, that in the 12th century there lived two Ceylonese priests, bearing the names of the two famous disciples of Buddha, *Sáriputta* and *Moggallána*; to the latter, it appeared, the composition of a grammar was ascribed by the Ceylonese themselves, but not to the former, *Sáriputta*. But Col. Fryer maintained that the Ceylonese were mistaken with respect to *Sáriputta*, and that they erroneously ascribed *Kachcháyana*'s grammar, which was really written by the Ceylonese *Sáriputta*, to the famous Indian *Sáriputta*, simply because of the identity of the two names. But if that were so, it was not easy to understand why a similar mistake was not made in the case of *Moggallána*. If Ceylonese tradition was correct in ascribing a grammar to the Ceylonese *Moggallána*, it may be accepted to be also correct, in not ascribing *Kachcháyana*'s grammar to the Ceylonese *Sáriputta*, but to an Indian *Kachcháyana*.

He had been informed by Dr. Mitra that *Kachcháyana* was already mentioned in the *Mahāvamśa*, in the 5th century A. D. In that case, it would be impossible that *Kachcháyana* should have lived in the 12th century A. D. But he did not recollect any such passage in the *Mahāvamśa*, and was inclined to suspect a misunderstanding. The mere mention of a famous person called *Katyáyana* was not sufficient to identify him with the Grammarian. The Chinese pilgrim *Hwentsang*, in the 8th century, also mentioned a certain *Katyáyana*, famous for his learning, the author of an *Abhidharma* and a *Kośa*, who was said to have lived 300 years after Buddha's *nirvāṇa*. It was not impossible that he might have been the Grammarian; but there was no direct evidence to identify them.

Col. Fryer's arguments in support of his theory were, in the main, two. First, that there was a striking correspondence between *Kachcháyana*'s grammar and the Sanskrit *Kātantra* grammar with regard to grammatical terminology. This circumstance was a well-known one; the question had been discussed by Dr. Burnell in his "*Aindra School of Sanskrit Grammarians*," with which work Col. Fryer appeared to be unacquainted. Dr. Burnell showed that the terminology in question was one common to the *Aindra* or pre-Pāṇinian School of Sanskrit Grammarians; whence it followed that, when it was used in two grammars, it did not necessarily show that one borrowed from the other, but only that they both belonged to the same school. Not long ago he (Dr. Hoernle) had published an edition of *Chanda*'s grammar of the Ancient *Prākṛit*, in which the same terminology (*e. g.*, *linga* in the

sense of "nominal base") occurred; yet the work must be very much older than the 10th century; it had been revised and recast over and over again, at various times, and in its latest revised form it was known to Hema Chandra, who lived in the middle of the 12th century. This simply showed that Chāṇḍa's grammar also belonged to the Aindra School. Col. Fryer ascribed the composition of the Kātantra grammar to the 10th century, but it did not appear on what grounds. Like many other ancient works, Kachcháyana's grammar may have passed through revisions; the commentary to it, in which Col. Fryer had pointed to one striking agreement with Durga Siṃha's commentary on the Kātantra, was not ascribed to Kachcháyana, but to Sanghanandī (as quoted by Dr. Burnell); and it might be possible that the commentary or one of the revisions of the grammar was made so late as the 12th century. Thus, while Kachcháyana's rule enjoined certain words (as *divvate*) to be spelled with *v*, in agreement with the ancient practice of the Inscriptions, his commentator, after a much later fashion, spells them with *b* (*dibbate*). The circumstance that Kachcháyana's grammar was not known to Buddhagosa had been satisfactorily explained by Dr. Burnell in his work on the Aindra Grammarians.

Col. Fryer's second argument was an historical one, but he (Dr. Hoernle) could not quite understand how it precluded the traditional ascription of the composition of the grammar in question to an *Indian* Kachcháyana. On the whole, he thought, therefore, that the question as to the identity of Kachcháyana must still be considered an open one.

Col. Fryer still thought that the Pāli of Ceylon and Burma was the language of Buddha used in Magadha. But most Pāli scholars were now agreed that this was not so, though they were not quite agreed to which exact locality in India it should be referred. The reasons against Pāli being Māgadhi were very strong; the exceptional (by no means "common," as Col. Fryer said) occurrence of *e* for *o*—a fact not unknown hitherto—was not at all decisive.

The following note was subsequently received from Col. Fryer:—

"According to Ariyaratna—who in 1439 A. D. wrote Kachcháyana bheda tīkā—the commentator Sanghanandī and Kachcháyana are the same person, and the illustrations are ascribed by him to Brahmādatta: for he says 'imāni suttāni mahākachcháyanaena katāni, vutti ca sanghanandīsaukhatēna mahākachcháyanaen' eva katā, payogo brahmādattēna kato ti Vuttam c'etaṃ:—

Kachcháyanakato yogo vutti ca sanghanandino, payogo brahmādattēna nyāso vimalabuddhinā [App. D'Alw. Introd. p. 104]

Omitting the illustrations '*dibbats*' &c. ascribed to Brahmādatta, Kachcháyana's rule, and Sanghanandī's comment thereon, singularly alike, are subjoined:—

Rule, tassa chavaggayakáarakáratam sadhátvantassa.

Comm., tassa yappaehchayassa chavaggayakáarakáratam hoti dhátvantena saba yathásambhavam [Kacc. VI, 2, 10].”*

3. *An Examination of the Trade Dialects of the Naqqásh or painters on papier-maché in the Panjáb and Kashmir.*—By LIEUT. R. C. TEMPLE, B. S. C., F. R. G. S., M. R. A. S.

(Abstract.)

In the Selections from the Records of the Panjáb Government, Section I, 1882, are some “Linguistic Fragments” by Dr. Leitner. Among these “fragments” are some words and phrases used by the Naqqásh or papier-maché painters of the Panjáb and Kashmir as a trade dialect or *argót*, and also a long list of numerals used by the shawl-weavers of Kashmir and the Panjáb. Lieutenant Temple lately had an opportunity of testing both these lists, and found them to be in the main correctly recorded, *i. e.*, according to his own ear, though in two or three instances he observed discrepancies. He discusses these differences and gives a list of additional words and phrases which he was enabled to record. He then enters into the question whether these words are part of a *boná fide* dialect or merely an *argót*, a more or less conscious formation of words for the purposes of secrecy; and gives his reasons for believing that, when there are more data available than at present, the bulk of the words will be found to be really dialectic and traceable to surrounding idioms or to the former stages of the modern Aryan languages, but that in some cases words have been inverted and nonsense-syllables prefixed or affixed in order to hide their true form. In conclusion, Lieutenant Temple remarks that if Dr. Leitner’s hope, that the Trade Dialects will be found to preserve an ancient language, is to become a reality, the enquiry must be taken up by more than one person. The range of knowledge required is too wide, and the investigations necessary too minute and searching, to admit of one individual solving the problem presented in a satisfactory manner.

The PRESIDENT announced that the next meeting of the Society would be held on the 1st of November.

* [Fausböll’s system of transliteration had been followed by Col. Fryer in his paper. But as some letters of that system do not exist in the Society’s Press, it has been thought better to preserve uniformity by substituting the system adopted by the Society in all their publications. Ed.]

LIBRARY.

The following additions have been made to the Library since the Meeting held in June last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,
presented by the respective Societies and Editors.

- Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. IV, Nos. 1-2, April and June, 1882.
- . ———. American Journal of Mathematics,—Vol. IV, No. 3.
- . ———. American Journal of Philology,—Vol. III, No. 9.
- . ———. Circular, No. 15, May, 1882.
- Berlin. Entomologische Zeitschrift,—Vol. XXVI, Part 1, 1882.
- Bombay. The Indian Antiquary,—Vol. XI, Parts 133-134, June and July, 1882.
- Bordeaux. Société de Géographie Commerciale,—Bulletin, Nos. 10-12 (1882).
- Bruxelles. Société Royale Malacologique,—Procès-Verbaux des Séances, 8 Jan., 1881 to 5 Mar., 1882.
- Calcutta. Geological Survey of India,—Records, Vol. XV, Part 1.
- . ———. Memoirs, Palæontologia Indica, Ser. VII, Vol. I, Part I; and Ser. X, Vol. II, Part 3.
- . Indian Evangelical Review,—Vol. IX, No. 33, July, 1882.
- . Indian Meteorological Memoirs,—Vol. I, 1876-81.
- . Meteorological Observations,—July to September, 1881.
- Edinburgh. Botanical Society,—Transactions and Proceedings, Vol. XIV, Part 2.
- . Royal Society,—Proceedings, Vol. XI, No. 108.
- . ———. Transactions,—Vol. XXX, Part 1.
- Florence. Archivio per l'Antropologia e la Etnologia,—Vol. XII, Part 1.
- Lahore. Journal of the Anjuman-i-Panjab,—Vol. II, Nos. 15-30.
- Leipzig. Deutsche morgenländische Gesellschaft,—Zeitschrift, Vol. XXXVI, Part 1.
- . Wissenschaftliche Jahresbericht über die morgenländischen Studien,—1879.
- London. Academy,—Nos. 523-531.

London. Athenæum,—Nos. 2846-2854.

———. Institution of Civil Engineers,—Minutes of Proceedings, Vol. LXVII.

———. Institution of Mechanical Engineers,—Proceedings, No. 1, 1882.

———. Nature,—Vol. XXVI, Nos. 654-662.

———. Royal Astronomical Society,—Monthly Notices, Vol. XLII, No. 5.

———. Royal Geographical Society,—Proceedings, Vol. IV, Nos. 4-5, April and May, 1882.

———. Royal Microscopical Society,—Journal, Vol. II, Part 2, April, 1882.

———. Royal Society,—Proceedings, Vol. XXXIII, No. 218.

———. Society of Telegraph Engineers,—Journal, Vol. XI, No. 41, April, 1882.

———. Statistical Society,—Journal, Vol. XLV, Part 1, March, 1882.

———. Zoological Society,—Proceedings, Part 4, 1881.

———. ————. Transactions,—Vol. XI, Part 6; and Index to Vols.

I-X.

Lyon. Muséum des Sciences Naturelles,—Rapport pour l'année 1881.

Montreal. Geological and Natural History Survey of Canada,—Reports of Explorations and Surveys, 1879-80; and Maps.

Moscow. Société Impériale des Naturalistes,—Bulletin, Vol. LVI, No. 2, 1881.

———. ————. Mémoires,—Vol. XIV, No. 2.

Munich. Repertorium für Experimental-Physik,—Vol. XVIII, Nos. 5-6.

Paris. Journal Asiatique,—Vol. XIX, No. 2, February to March, 1882.

———. Société d'Anthropologie,—Bulletins, Vol. IV, No. 4, August to December, 1881; and Vol. V, No. 1, January to March, 1882.

———. Société de Géographie,—Bulletin, November to December, 1881.

———. ————. Compte Rendu des Séances, Nos. 8-13.

———. Société Zoologique de France,—Bulletin, No. 6, 1881; and No. 1, 1882.

Prague. K. k. Sternwarte,—Astronomische magnetische und meteorologische Beobachtungen, 1881.

Rome. R. Accademia dei Lincei,—Atti, Vol. VI, Nos. 11-12.

———. Società degli Spettroscopisti Italiani,—Memorie, Vol. XI, No. 4, April, 1882.

Shanghai. North China Branch of the Royal Asiatic Society,—Report of the Council for 1881.

Simla. Journal of the United Service Institution of India,—Vol. XI, No. 51.

St. Petersburg. L'Académie Impériale des Sciences,—Bulletin, Vol. XXVIII, No. 4.

gadds and other wandering Tribes, the argots of thieves, the secret trade dialects and systems of native cryptography in Kabul, Kashmir, and the Panjab, followed by an account of shawl weaving, &c. Fcp. Lahore, 1882. Pam.

PANJAB GOVERNMENT.

General Report on the operations of the Survey of India during 1880-81. Fcp. Calcutta, 1882.

REVENUE AND AGRICULTURAL DEPARTMENT.

MARKHAM, C. R. The Natural and Moral History of the Indies, by Father Joseph de Acosta. Vol. II. (Hakluyt Society.) 8vo. London, 1880.

———. The Voyages of William Baffin, 1612-22. (Hakluyt Society.) 8vo. London, 1881.

ALVAREZ, FATHER FRANCISCO. Narrative of the Portuguese Embassy to Abyssinia during the years 1520-27. Translated from the Portuguese and edited with Notes and Introduction by Lord Stanley of Alderley. (Hakluyt Society.) 8vo. London, 1881.

SECRETARY OF STATE FOR INDIA.

Trübner's Catalogue of Dictionaries and Grammars. 2nd Edition. 8vo. London, 1882.

MESSRS. TRUEBNER AND CO.

PERIODICALS PURCHASED.

Berlin. Deutsche Litteraturzeitung,—Nos. 12-16, 1882.

———. Journal für die reine und angewandte Mathematik,—Vol. XCII, No. 3.

Calcutta. Calcutta Review,—Vol. LXXV, No. 149, July, 1882.

———. Indian Medical Gazette,—Vol. XVII, Nos. 6-7, June and July, 1882.

Cassel. Botanisches Centralblatt,—Vol. IX, Nos. 1-13, and Index.

Edinburgh. Edinburgh Review, No. 318, April, 1882.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. VII, Nos. 5-6.

Giessen. Jahresbericht über die Fortschritte der Chemie,—Part 3, 1880.

Göttingen. Gelehrte Anzeigen,—Nos. 19-28.

———. Nachrichten,—Nos. 9-14.

Leipzig. Annalen der Physik und Chemie,—Vol. XVI, Nos. 5-7.

———. Beiblätter,—Vol. VI, Nos. 4-5.

———. Hesperos,—Vol. I, Nos. 22-23.

———. Litterarisches Centralblatt,—Nos. 13-18, 1882.

London. Annals and Magazine of Natural History,—Vol. IX, Nos. 52-53.

London. *Chemical News*,—Vol. XLV, Nos. 1172-1179, and Vol. XLVI, No. 1180.

———. *Entomologist*,—Vol. XV, Nos. 227-228.

———. *Entomologist's Monthly Magazine*,—Vol. XVII, Nos. 215-216.

———. *Journal of Botany*,—Vol. XI, Nos. 232-233, April and May, 1882.

———. *Journal of Science*,—Vol. IV, Nos. 100-101, April and May, 1882.

———. *London, Edinburgh and Dublin Philosophical Magazine*,—Vol. XIII, Nos. 81-82, April and May, 1882.

———. *Messenger of Mathematics*,—Vol. XI, Nos. 11-12, March and April, 1882.

———. *Mind*,—No. 26, April, 1882.

———. *Nineteenth Century*,—Vol. XI, Nos. 62-63, April and May, 1882.

———. *Publishers' Circular*,—Vol. XLV, Nos. 1072-1075.

———. *Quarterly Journal of Microscopical Science*,—Vol. XXII, No. 86, April, 1882.

———. *Quarterly Review*,—Vol. CLIII, No. 306, April, 1882.

———. *Society of Arts*,—*Journal*, Vol. XXX, Nos. 1538-1546.

———. *The Ibis*,—Vol. VI, No. 22, April, 1882.

New Haven. *American Journal of Science*,—Vol. XXIII, No. 136, April, 1882.

Paris. *Annales de Chimie et de Physique*,—Vol. XXVI, May and June, 1882.

———. *Comptes Rendus*,—Vol. XCIV, Nos. 18-19, 21-26; and Index to Vol. XCIII.

———. *Journal des Savants*,—March, April and May, 1882.

———. *Revue Critique*,—Vol. XIII, Nos. 19-26; and Vol. XIV, No. 27.

———. *Revue des deux Mondes*,—Vol. LI, Nos. 2-4; and Vol. LII, No. 1.

———. *Revue de Linguistique*,—Vol. XV, Fas. 2.

———. *Revue Scientifique*,—Vol. XXIX, Nos. 19-25; and Vol. XXX, Nos. 1-2.

BOOKS PURCHASED.

BAILLON, H. *The Natural History of Plants*. Translated by Marcus M. Hartog. Vols. I-VII. 8vo. London, 1871-81.

CAMPBELL, DONALD. *A journey over land to India partly by a route never gone before by any European, in a series of letters to his son, comprehending his Shipwreck and Imprisonment with Hyder Ali, and his subsequent negotiations and transactions in the East*. 4to. London, 1795.

- COBBOLD, T. SPENCER. Parasites; a treatise on the Entozoa of Man and Animals, including some account of the Ectozoa. 8vo. London, 1879.
- DIEZ, FRIEDRICH. Etymologisches Wörterbuch der Romanischen Sprachen. Vierte Ausgabe mit einem Anhang von August Scheler. 8vo. Bonn, 1878.
- EVANS, JOHN. The Ancient Stone Implements, Weapons, and Ornaments of Great Britain. 8vo. London, 1872.
- FISHER, REV. OSMOND. Physics of the Earth's Crust. 8vo. London, 1881.
- FREY, PROF. DR. HEINRICH. Die Lepidopteren der Schweiz. 8vo. Leipzig, 1880.
- Ganesa Purana. (Lithograph.) Obl. Fol. Bombay.
- GOULD, JOHN. The Birds of Asia, Part XXXIII. Fol. London, 1882.
- HANWAY, JONAS. An Historical Account of the British Trade over the Caspian Sea: with a Journal of Travels from London through Russia into Persia; and back again through Russia, Germany and Holland. To which are added, the Revolutions of Persia during the present century, with the particular history of the great usurper Nadir Kouli. 4 Vols. in two. 4to. London, 1753.
- HATTON, JOSEPH. "The New Ceylon." Being a sketch of British North Borneo, or Sabah. From official and other exclusive sources of information. 12mo. London, 1881.
- HUXLEY, THOMAS H. Science and Culture; and other Essays. 8vo. London, 1882.
- LAURIE, COL. W. F. B. Ashé Pyee, the Superior Country; or the great attractions of Burma to British enterprise and commerce. 12mo. London, 1882.
- LEGRAND, E'MILE. Recueil de Contes Populaires Grecs traduits sur les textes originaux. 16mo. Paris, 1881.
- Linga Purana, with Ganesa's Commentary. (Lithograph.) Obl. Fol. Bombay.
- LUDWIG, ALFRED. Der Rigveda oder die heiligen Hymnen der Bráhmāna. Zum ersten Male vollständig ins deutsche übersetzt mit Commentar und Einleitung, Vols. I-IV. 4to. Prag, 1876-81.
- NORDENSKIÖLD, A. E. The voyage of the Vega round Asia and Europe with a historical review of previous journeys along the north coast of the Old World. Translated by Alexander Leslie, Vols. I-II 8vo. London, 1881.
- OLDENBERG, HERMANN. Buddha. Sein Leben, seine Lehre, seine Gemeinde. 8vo. Berlin, 1881.
- . The Vinaya Pitakam. Vol. IV. Suttavibhaṅga, Second Part. 8vo. London, 1882.

- PAGENSTECKER, H. ALEXANDER. Allgemeine Zoologic oder Grundgesetze des thierischen Baus und Lebens. Vols. I-IV. 8vo. Berlin, 1875-81.
- PICKERING, CHARLES. The Races of Man; and their Geographical Distribution. New Edition. To which is prefixed, an Analytical Synopsis of the Natural History of Man, by John Charles Hall, M. D. 12mo. London, 1863.
- Report of the Fifty-first meeting of the British Association for the Advancement of Science; held at York in August and September, 1881. 8vo. London, 1882.
- SCHURMAN, J. GOULD. Kantian Ethics and the Ethics of Evolution. A critical study. 8vo. London, 1882.
- THOMSON, SIR WYVILLE. Report of the Scientific Results of the Voyage of H. M. S. "Challenger."—Zoology. Vol. III. 4to. London, 1881.
- UHLE, HEINRICH. Die Vetālapañcaviṇṇatikā in den Recensionem des Īvadāsa und eines ungenannten mit kritischen Commentar. 8vo. Leipzig, 1881.
- WHINFIELD, E. H. The Quatrains of Omar Khayyām translated into English verse. 8vo. London, 1882.
-



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.
FOR NOVEMBER, 1882.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st November, 1882, at 9.15 P. M.

The HON'BLE H. J. REYNOLDS, President, in the Chair.

The minutes of the last Meeting were read and confirmed.

The following presentations were announced—

1. From the Committee,—*Verhandlungen des Fünften Internationalen Orientalisten Congresses gehalten zu Berlin im September 1881. Zweite Theil, erste und zweite Hälften.*

2. From the India Office,—*Sacred Books of the East*, by F. Max Müller, Vols VIII, XII, XIII and XVI.

3. From the Home Department,—(1) *Pahlavi, Gujarāti, and English Dictionary*, Vol. III, by J. D. M. J. Asana; (2) *An English Persian Dictionary*, compiled from original sources, by Arthur N. Wollaston; (3) *The Lepidoptera of Ceylon*, by F. Moore, Parts I—II.

4. From the Authors, Translators, &c.,—(1) *Translation of Valmiki's Ramayana in Hindi*, by Gopal Sarma; (2) *Tarjuma-i-Alif Laila Ba-Zubān-i-Urdū. Romanized*, by T. W. H. Tolbort; (3) *On the Genealogy of Modern Numerals*, by Sir Edward Clive Bayley; (4) *On some Mammals from the North West Frontier of Kashmir; On the Mammals of Gilgit; Description of a New Species of Arvicola from Gilgit; A Contribution to the Ornithology of Gilgit (in two parts); On some Mammals from Kandahar*, by Dr. J. Scully; (5) *A Manual of the Land Revenue Systems and Land Tenures of British India*, by B. H. Baden-Powell; (6) *Victoria's Flag of Victory, a Poem in Hindi*, by Harish Chandra; (7) *Oriental Studies*, by Hugh Nevill, Part II; (8) *The Cloud Messenger of Kālidās, rendered into Hindi Verse, with Notes*, by Raja Lakshman Singh.

5. From the British Museum,—(1) Catalogue of Oriental Coins in the British Museum, Vol. VII; (2) List of Hymenoptera in the British Museum, Vol. I, by W. F. Kirby.

6. From the Government of Bengal,—Archæological Survey of India. Reports, Vol. XIV.

7. From the Australian Museum,—Report of the Trustees for 1881.

8. From the Panjab Government,—Biluchi-Namah, a text book of the Biluchi Language, by Hittu Ram.

9. From the Panjab University College,—An Elementary Course of Civil Engineering in Hindi, Part I: General Construction, by Navina Chandra Rai.

10. From K. B. Akad. der Wissenschaften, München,—Gedächtnissrede auf Otto Hesse, by Gustav Bauer.

11. From the Committee,—Norwegian North-Atlantic Expedition, 1876-78, IV, 1, Historical Account, and 2, The Apparatus, and how used, by C. Wille; V, 1, Astronomical Observations, by H. Mohn; 2, Magnetical Observations, by C. Wille; 3, Geography and Natural History, by H. Mohn.

12. From the Ceylon Branch, Royal Asiatic Society,—Panini's Eight Books of Grammatical Sutras; edited with an English translation and commentary, Vol. I, Part I, by William Goonetilleke.

13. From the St. Xavier's College Observatory,—Observations, January—June, 1882.

14. From the Madras Government,—The Mackenzie Collection; A Descriptive Catalogue of the Oriental MSS. and other articles illustrative of the Literature, History, Statistics and Antiquities of the South of India: collected by the late Lieut.-Col. Colin Mackenzie, Surveyor General of India.

15. From the Indian Museum,—Annual Report, List of Accessions, and selected Extracts of Minutes, 1881-1882, Vol. XIII (6 copies).

16. The following set of 55 specimen coins struck from the old dies in the Calcutta Mint, presented to the Society by the Governor-General in Council through Colonel J. F. Tennant, Master of the Mint:—

List of Specimen Coins struck from the old dies in the Calcutta Mint for the Asiatic Society of Bengal.

| DESCRIPTION OF COINS. | TALE. | WEIGHT. | |
|--|-------|---------|-----|
| | | Tolas. | Do. |
| Gold. Old Std. Mohur (oblique milled) ... | 1 | 1 | 06 |
| " New Std. Mohur (straight milled) ... | 1 | 1 | 13 |
| " (1835) William IV Double Mohur ... | 1 | 2 | ... |
| " Ditto Do. Single " ... | 1 | 1 | ... |
| " (1875) Victoria Queen Single " ... | 1 | 1 | ... |
| " Ditto Do. 2/3rd " ... | 1 | ... | 66 |
| " Ditto Do. 1/3rd " ... | 1 | ... | 33 |
| Silver. William IV Rupee ... | 1 | 1 | ... |
| " " $\frac{1}{2}$ " ... | 1 | ... | 5 |
| " " $\frac{1}{4}$ " ... | 1 | ... | 25 |
| " Victoria Queen (1840) Rupee ... | 1 | 1 | ... |
| " Ditto " $\frac{1}{2}$ " ... | 1 | ... | 5 |
| " Ditto " $\frac{1}{4}$ " ... | 1 | ... | 25 |
| " Ditto (1841) $\frac{1}{2}$ " ... | 1 | ... | 12 |
| " Ditto (1849) " ... | 1 | 1 | ... |
| " Ditto " $\frac{1}{2}$ " ... | 1 | ... | 5 |
| " Ditto " $\frac{1}{4}$ " ... | 1 | ... | 25 |
| " Ditto " $\frac{1}{8}$ " ... | 1 | ... | 12 |
| " Victoria Empress (1881) Rupee ... | 1 | 1 | ... |
| " Ditto " $\frac{1}{2}$ " ... | 1 | ... | 5 |
| " Ditto " $\frac{1}{4}$ " ... | 1 | ... | 25 |
| " Ditto " $\frac{1}{8}$ " ... | 1 | ... | 12 |
| " Madras Old Rupee (straight milled) ... | 1 | ... | 98 |
| " Ditto New " ... | 1 | 1 | ... |
| " Ditto $\frac{1}{2}$ " " ... | 1 | ... | 5 |
| " Ditto $\frac{1}{4}$ " " ... | 1 | ... | 25 |
| " Furruckabad Rupee (smooth rim) ... | 1 | 1 | ... |
| " Ditto $\frac{1}{2}$ " ... | 1 | ... | 5 |
| " Ditto $\frac{1}{4}$ " ... | 1 | ... | 25 |
| " Ditto Re. Old Std. (oblique milled) ... | 1 | ... | 96 |
| " Sicca Rupee New Std. (straight milled) Reg. XIV of 1818 ... | 1 | 1 | 06 |
| " Ditto $\frac{1}{2}$ ditto ... | 1 | ... | 53 |
| " Ditto $\frac{1}{4}$ ditto ... | 1 | ... | 26 |
| " Sicca Rupee New Std. (smooth rimmed) Reg. VII of 1838 ... | 1 | 1 | 06 |
| " Ditto $\frac{1}{2}$ ditto ... | 1 | ... | 53 |
| " Ditto $\frac{1}{4}$ ditto ... | 1 | ... | 26 |
| " Furruckabad Re. New Std (straight milled) ... | 1 | 1 | ... |
| " Bombay Rupee (straight milled) ... | 1 | 1 | ... |

| DESCRIPTION OF COINS. | TALE. | WEIGHT. | |
|---|-------|---------|-----|
| | | Tolas. | Dc. |
| Silver. Benares Rupee (oblique milled) | 1 | ... | 97 |
| " Ditto $\frac{1}{2}$ " ditto | 1 | ... | 48 |
| " Ditto $\frac{1}{4}$ " ditto | 1 | ... | 24 |
| Copper. Bronzed Bombay $\frac{1}{2}$ anna .. | 1 | 1 | 08 |
| " Ditto $\frac{1}{4}$ " .. | 1 | ... | 54 |
| " Ditto pie ... | 1 | ... | 18 |
| " Pultah $\frac{1}{2}$ anna ... | 1 | 1 | 24 |
| " Ditto $\frac{1}{4}$ " ... | 1 | ... | 6 |
| " Ditto $\frac{1}{2}$ pice ... | 1 | ... | 3 |
| " Sicea pice (without rim) ... | 1 | ... | 54 |
| " Ditto (with rim) ... | 1 | ... | 54 |
| " Ditto $\frac{1}{2}$ anna ... | 1 | 1 | 08 |
| " Ditto pie ... | 1 | ... | 18 |
| " Victoria Empress $\frac{1}{2}$ anna ... | 1 | 1 | 1 |
| " Ditto single pice .. | 1 | ... | 56 |
| " Ditto $\frac{1}{2}$ pice ... | 1 | ... | 28 |
| " Ditto pie ... | 1 | ... | 18 |

The PRESIDENT announced that the descriptive Catalogue of the invaluable collection of Nepalese Sanskrit Buddhist Manuscripts presented to the Society by Mr. B. H. Hodgson, which Dr. Rajendralala Mitra had been engaged in preparing for several years, was now published, and a copy was laid upon the table.

The SECRETARY reported that the following gentleman had been elected an Ordinary Member by the Council during the recess, in accordance with Rule 7 :

Dr. A. Barclay.

The election was confirmed by the Meeting.

The following gentlemen are candidates for ballot at the next Meeting :

W. R. H. Merk, Esq., C. S., Under-Secretary to Govt., Panjab, proposed by D. Ibbetson, Esq., seconded by J. Wilson, Esq.

Walter Lawrence, Esq., C. S., Ajmere, proposed by D. Ibbetson, Esq., seconded by J. Wilson, Esq.

The following gentlemen have intimated their desire to withdraw from the Society :

Wm. Crooke, Esq.

Rev. A. N. W. Spens.

The PRESIDENT reported that Dr. J. Scully had been elected a Member of the Natural History Committee; and that Mr. J. Wood-Mason, the Natural History Secretary, had left India.

A vote of thanks was unanimously passed to Mr. Wood-Mason for his valuable services as Natural History Secretary for the past 8 years, and for the care and attention he had devoted to the editing of the Society's Journal, Part II.

The SECRETARY reported that the following coin had been acquired under the Treasure Trove Act :

A Silver Coin found in a village of the Manpur Pergunnah.

The following papers were read :

1. *On the Pagoda or Varaha Coins of Southern India.*—By DR. G. BIDIE, Government Central Museum, Madras.

(Abstract.)

The unit of the monetary system of Southern India in old times was the gold *pagoda*, subdivided into *fanams* and *cash*. Latterly from political causes, which are discussed in this paper, the varieties of these coins became very numerous, so that their discrimination at the present day is a matter of some difficulty. Taken as a whole, the pagodas afford most valuable and interesting information regarding the early political history of India south of the Kistna. Their value in this respect was long overlooked, and no systematic attempt was made until recently to form a permanent public collection of the series. Owing to this neglect, many of the older forms are quite unknown to numismatists, and there is little prospect of making good the defect. As regards those that have been preserved, very little information of a reliable kind has been recorded and the few facts that remain refer mostly to the more modern forms and are scattered in local histories, travels, &c., which sometimes contain incidental allusions to the currency of the day.

To numismatists who have been accustomed to study old European coins or those of the Muhammadan sovereigns of India, the Madras pagodas appear particularly puzzling and uninteresting, as they do not always bear the name of the sovereign who struck them, and never give any information as to the place or date of mintage. The derivation of the name *pagoda* is discussed, and that given by Bartolomeo, who lived in Southern India from 1776 to 1789, adopted. The forms of the pagoda of which there are specimens in the Madras Museum are divided into the following groups, arranged according to dynasties and in chronological order: (1) Buddhist Coins, (2) Chalukya Coins, (3) Nonambavadi Coins, (4) Coins of the Gajapati Dynasty, or Elophant Lords, (5) the Lingayat Pagoda, (6) Vijayanagar or Bijanagar Pagodas, (7) the Gaudikota Pagoda, (8) the Chital-

droog Pagoda, (9) the Travancore Pagoda, (10) East India Company's Pagodas, (11) Adoni Pagodas, and (12) Mysore Pagodas.

The circumstances under which the coins of each group were probably struck are discussed, and detailed descriptions with figures given of the specimens in the Madras Museum.

This paper will be published with plates in the Journal, Part I, 1882.

2. *Notes on the Butterflies of India.*—By MAJOR G. F. L. MARSHALL, R. E.

Since the publication of the first Part of Vol. I, of "The Butterflies of India, Burmah and Ceylon,"* a small collection and some notes have been sent by Captain C. H. E. Adamson from Akyab, which furnish some additional information as to the distribution of some of the *Danainæ*.

No. 5. *Hestia cadelli*. A single male specimen of a *Hestia* was taken on the sea coast at Akyab, which, Captain Adamson writes, corresponded mark for mark with the figure given of this species (Pl. IV, fig. 2 ♂). I have not seen the specimen, but I feel convinced that it must really have belonged to the form named *agamarschana* which has recently been taken in the Mergui archipelago. In either case the occurrence of a *Hestia* of this type so far north is worthy of note.

No. 20. *Danaïs tytia*. Captain Adamson remarks that this, in Tenasserim as in India, is a hill insect, comparatively rare, and that in the plains it is replaced by *D. melaneus* which is far commoner.

No. 24. *Danaïs gautama*. Captain Adamson sends several specimens taken at one locality on the seashore at Akyab where they were in company with *D. genutia*, *D. hegesippus*, *D. chrysippus* and *D. septentrionis* which were all abundant at that one spot. He writes, "Had I not been specially looking for them I should have passed them over as *D. septentrionis*, but now I can tell the difference at once on the wing: *D. gautama* shows much less blue when on the wing and is more like *D. aglæa* in appearance, except for its larger size."

No. 34. *Danaïs hegesippus*. Captain Adamson has taken a curious variety of this species with an additional white spot below the subapical series in the fulvous space between the first median nervule and submedian nervure: only three specimens of this variety were taken and all at the same spot.

No. 40. *Euplœa margarita*. A specimen from Moulmein of typical *margarita* has the forewing with only two minute white marginal spots

* The Butterflies of India, Burmah and Ceylon; a descriptive hand-book of all the known species, by Major G. F. L. Marshall, R. E., and Lionel de Nicéville. Published at Calcutta by the Calcutta Central Press Co., 5, Council House Street.

at the hinder angle, and the blue shot extends very nearly to the margin; the shape of the forewing in this specimen and the dark tone of the margin strengthen the possibility of this species being separable from *E. adamsoni*.

No. 44. *Euplœa klugii*. A male specimen of typical coloration was taken at Akyab: this is the most southern locality yet recorded for this species.

No. 48. *Euplœa vestigiata*. A very large female of this species taken at Moulmein has on the hindwing at the anal angle three diffused and coalescent whitish spots. It corresponds with the description of *E. leucogonyx*, and its large size throws doubt on the distinctness of the latter species.

No. 60. *Euplœa bremeri*. A female specimen is sent from Akyab where it was taken in July by Captain Adamson; this is considerably north of any locality yet recorded for this insect.

No. 61. *Euplœa core*. A typical male specimen from Akyab was among the collection; it shows no approach to the Burman form *E. subdita*, which latter was taken at the same place by Mr. Wood-Mason. The fact of the two forms being distinct at the same boundary establishes *E. subdita* as a good species.

No. 68. *Euplœa godartii*. A very remarkable female specimen was taken at Akyab in July, in which there is no trace whatever of the violet apical patch; the outer margin too is more emarginate than is usual. Akyab is the most northern defined locality at which this species has been taken.

3. *Coins, supplementary to "The Chronicles of the Pathân Sultâns of Delhi."* No. III.—By C. J. RODGERS.

(Abstract.)

Mr. Rodgers describes in this paper some coins received from Affghanistan and India which have not yet been edited. The coins are described in detail with figures and the inscriptions thereon transcribed. Mr. Rodgers then discusses the peculiarities of each, drawing attention to any points of history that have a fresh light thrown upon them by the inscriptions on the coins. The most important of these coins is one of Yattamada Kanalraka which bears the name of the mint, "Gazni." Up to the present all that was known of this ruler was that he was a ruler of Sind, and that his father had ruled in Gazni and Karmân. This coin gives evidence of his having ruled in his father's dominions. Another coin of importance is a small damri of Taimur struck at Delhi. It is believed to be unique and is the only one of Taimur's Indian coins that Mr. Rodgers has seen.

This paper will be published with plates in the Journal, Part 1, 1882.

4. *Second notice of Relics from Ancient Persia, in gold, silver, and copper.*—By MAJOR-GENERAL CUNNINGHAM, C. S. I.

(Abstract.)

This paper describes several new objects discovered since the first notice was written.* These relics were found on the banks of the Oxus, near a place called Kawat or Kuád, two marches from Kunduz and about midway between Khulm and Kaliádan. This is one of the most frequented ferries on the Oxus, and has always been the chief thoroughfare on the road to Samarkand. It is said that the owner of the land has now stopped all search by other people and intends to explore on his own account. The coins which General Cunningham has seen consist of 14 gold and 76 silver pieces, and he concludes from them that the deposit must have been made before the time of Mithridates I. The following ornaments and other articles of gold which have been discovered are described in this paper:—a gold circle of large size, with two winged and horned gryphons at the ends; a small figure of solid gold representing a “magus” in full costume with the *barsom*, or holy wand, in his right hand; a gold seal with five deeply cut symbols somewhat like hieroglyphic characters; a thin gold ring of inferior workmanship, representing a lion couchant; a circular boss, convex on the upper surface, with a hunting scene depicted on it, probably the central boss of a shield; a plain gold bracelet of one coil ending in two antelope heads; a ribbed bracelet of two coils ending in two lions’ heads; a spirally twisted bracelet of three coils ending in two antelope heads; and two lions’ heads, each of which probably formed one end of a bracelet.

This paper will also be published with plates in the *Journal*, Part I, 1882.

* *Journal of the Asiatic Society of Bengal*, Vol. L, Part I, 1881.

LIBRARY.

The following additions have been made to the Library since the Meeting held in August last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

- Baltimore. Johns Hopkins University,—American Chemical Journal, Vol IV, No. 3, July, 1882.
- . ———. American Journal of Mathematics,—Vol, IV, No. 4.
- . ———. Circulars,—No. 17, August, 1882.
- . ———. Studies from the Biological Laboratory,—Vol. II, No. 3.
- Batavia. Natuurkundig Tijdschrift voor Nederlandsch-Indië,—Vol. XLI.
- Bombay. The Indian Antiquary,—Vol. XI, Pts. 135-137, August to October, 1882.
- Bordeaux. Société de Géographie Commerciale,—Bulletin, Nos. 13-16.
- Boston. American Oriental Society,—Proceedings, May 24th, 1882.
- Brussels. Musée Royal d'Histoire Naturelle de Belgique,—Annales, Vols. I-VI, with Plates for Vols. I, II, and IV-VI.
- Calcutta. Geological Survey of India,—Records, Vol. XV, Part 3, 1882.
- . Original Meteorological Observations,—October to November, 1881.
- Cherbourg. Société Nationale des Sciences Naturelles et Mathématiques,—Mémoires, Vol. XXIII.
- Colombo. Ceylon Branch of the Royal Asiatic Society,—Journal, Vol. VII, Part 2, No. 24, 1881.
- Dublin. Royal Irish Academy,—Proceedings (Polite Literature and Antiquities), Ser. II, Vol. II, No. 3, December, 1881; and (Science), Ser. II, Vol. III, Nos. 7-8, December, 1881, and May, 1882.
- . ———. Transactions (Science), Vol. XXVIII, October to November, 1881, and April to June, 1882.
- Geneva. Société de la Physique et d'Histoire Naturelle,—Mémoires, Vol. XXVII, Part 2.
- Halle. Kais. Leopoldinisch-Carolinische Deutsche Akademie der Naturforscher,—Nova Acta, Vols. XLII-XLIII.
- Helsingfors. Scientific Society of Finland,—Bidrag, Vols. XXXV-XXXVI.
- . ———. Ofversigt af Förhandlingar, Vol. XXIII, 1880-81.

- Labore. Anjuman-i-Panjab,—Journal (English Section), Vol. II, Nos. 31-41, 43, and Extra No., 11th October, 1882.
- Liège. Société Géologique de Belgique,—Annales, Vol. VIII.
 ——. Procès Verbal, 16th July, 1882.
- London. Anthropological Institute,—Journal, Vol. XI, No. 4; Vol. XII, No. 1, May and August, 1882.
 ——. Geological Society,—Quarterly Journal, Vol. XXXVIII, Nos. 150-151, Parts 2-3, May and August, 1882.
 ——. Institution of Civil Engineers,—Minutes of Proceedings, Vol. LXVIII.
 ——. Institution of Mechanical Engineers,—Proceedings, No. 2, April, 1882.
 ——. Nature, Vol. XXVI, Nos. 659, 663-675.
 ——. Royal Asiatic Society,—Journal, Vol. XIV, Parts 2-3.
 ——. Royal Astronomical Society,—Monthly Notices, Vol. XLII, Nos. 6-8, April to June, 1882.
 ——. Royal Geographical Society,—Proceedings, Vol. IV, Nos. 6-8, June to August, 1882.
 ——. Royal Microscopical Society,—Journal, Vol. II (2nd Ser.), Parts 3-4.
 ——. Royal Society,—Proceedings, Vol. XXXIII. No. 219; and Vol. XXXIV, No. 220.
 ——. Society of Telegraph Engineers,—Journal, Vol. XI, No. 42; and Index to the first ten Vols.
 ——. Statistical Society,—Journal, Vol. XLV, Part 2, June, 1882.
 ——. The Academy, Nos. 532-544.
 ——. The Athenæum, Nos. 2855-2867.
 ——. Zoological Society,—Proceedings, Part I, 1882; and Index for the Vols. from 1871-1880.
- Madras. Journal of Literature and Science for 1881.
- Melbourne. Royal Society of Victoria,—Transactions and Proceedings, Vol. XVIII.
- Moscow. Société Impériale des Naturalistes,—Bulletin, No. 3, 1881.
- Munich. Repertorium für Experimental-Physik,—Vol. XVIII, Nos. 7-9.
 ——. K. b. Akademie der Wissenschaften, Sitzungsberichte, philosophisch-philologische und historische Classe,—Vol. II, Parts 2-5, 1881.
 ——. ——. Mathematisch-physikalische Classe, Part 4, 1881, Parts 1-2, 1882.
 ——. ——. Abhandlungen, philosophisch-philologische Classe, Vol. XVI, Part 2.
 ——. ——. Historische Classe, Vol. XVI, Part 1.
- New-Haven. Connecticut Academy of Arts and Sciences,—Transactions, Vol. IV, Part 2; Vol. V, Part 2.

- Paris. *Journal Asiatique*, Vol. XIX, No. 3, April to June, 1882.
- . *La Société d'Anthropologie*,—Bulletin, Vol. V, No. 2, March to April, 1882.
- . *Société de Géographie*,—Bulletin, Vol. III, Part 1, 1882.
- . ———. *Compte Rendu des Séances*, Nos. 14-16, 1882.
- . *Société Zoologique de France*,—Bulletin, Nos. 2-4, 1882.
- Philadelphia. *American Philosophical Society*,—Proceedings, Vol. XIX, No. 109, June to December, 1881.
- Rome. *R. Accademia dei Lincei*,—Atti, Vol. VI, Part 13.
- . *Società degli Spettroscopisti Italiani*,—Memorie, Vol. XI, Nos. 5-7, May to July, 1882.
- Roorkee. *Professional Papers on Indian Engineering*,—Vol. XI, No. 43, June, 1882.
- Schaffhausen. *Société Entomologique Suisse*,—Bulletin, Vol. VI, No. 6, May, 1882.
- Simla. *United Service Institution of India*,—Journal, Vol. XI, No. 52, 1882.
- Stuttgart. *Verein für Vaterländische Naturkunde*,—Jahreshefte, 1882.
- Turin. *R. Accademia delle Scienze*,—Atti, Vol. XVII, Nos. 6-7.
- . *Osservatorio della Regia Università*,—Bollettino, 1881.
- Vienna. *Anthropologische Gesellschaft*,—Mittheilungen, Vol. XI, Nos. 3-4.
- . *Kaiserliche Akademie der Wissenschaften*,—Archiv für österreichische Geschichte, Vol. LXII, Part 2; Vol. LXIII, Parts 1-2.
- . ———. *Sitzungsberichte*,—Mathematisch-naturwissenschaftliche Classe, Part I, Vol. LXXXIII, No. 5; Vol. LXXXIV, Nos. 1-5; Part II, Vol. LXXXIII, No. 5; Vol. LXXXIV, Nos. 1-5; Vol. LXXXV, Nos. 1-2; Part III, Vol. LXXXIII, Nos. 3-5; Vol. LXXXIV, Nos. 1-5.
- . ———. ———. *Philosophisch-historische Classe*,—Vol. XCVIII, No. 3; Vol. XCIX, Nos. 1-2.
- . ———. *Denkschriften*,—Mathematisch-naturwissenschaftliche Classe, Vols. XLIII and XLIV.
- . ———. ———. *Philosophisch-historische Classe*,—Vol. XXXII.
- . *K. K. Geologische Reichsanstalt*,—Abhandlungen, Vol. XII, Part 3.
- . ———. *Jahrbuch*, Vol. XXXII, No. 1, January to March, 1882.
- . ———. *Verhandlungen*, Nos. 1-7, 1882.
- Washington. *War Department, Army Signal Service*,—Professional Papers, Nos. 1-6.

- Washington. Annual Report of the Chief Signal Officer, for 1879.
 ———. Smithsonian Institution,—Annual Report for 1880.
 Wellington. New Zealand Institute,—Transactions and Proceedings, Vol. XIV, 1881.
 Yokohama. Deutsche Gesellschaft für Natur-und Völkerkunde Ostasiens, —Mittheilungen, August, 1882.
 Zagreb. Arkeologickoga Druzstva,—Viestnik, Vol. IV, No 3.

BOOKS AND PAMPHLETS,

presented by the Authors, Translators, &c.

- BADEN-POWELL, B. H. A Manual of the Land Revenue Systems and Land Tenures of British India. 8vo. Calcutta, 1882.
 BAYLEY, SIR EDWARD CLIVE. On the Genealogy of Modern Numerals. 8vo. London, 1882.
 CHANDRA, HARISH. Victoria's Flag of Victory, a Poem in Hindi. 16mo. Benares, 1882. Pam.
 NEVILL, HUGH. Oriental Studies. Part II. 8vo. Colombo, 1882.
 ROEPSTORFF, F. A. DE. Gegenstände von den Nicobaren. 8vo. Berlin, 1882.
 SARMA, GOPAL. Translation of Valmiki's Ramayana in Hindi. 8vo. Benares.
 SCULLY, DR. JOHN. On some Mammals from the North-West Frontier of Kashmir. 8vo. London, 1881. Pam.
 ———. ———. On the Mammals of Gilgit. 8vo. London, 1881. Pam.
 ———. ———. Description of a New Species of Arvicola from Gilgit. 8vo. London, 1880. Pam.
 ———. ———. A Contribution to the Ornithology of Gilgit. (In two parts.) 8vo. London, 1881. Pam.
 ———. ———. On some Mammals from Kandahar. 8vo. London, 1881. Pam.
 SINH, RAJA LAKSHMAN. The Cloud Messenger of Kálidás, rendered into Hindi Verse, with Notes. 4to. Benares, 1882.
 TOLBORT, THOMAS WILLIAM H. Tarjuma-i-Alif Laila Ba-Zubán-i-Urdu. Romanized. Edited by Frederic Pincott. 8vo. London, 1882.

MISCELLANEOUS PRESENTATIONS.

- New South Wales, Australian Museum. Report of the Trustees for 1881. Fcp. Sydney, 1882.

AUSTRALIAN MUSEUM.

- Report on the Calcutta Medical Institutions for the year 1881. Fcp. Calcutta, 1882.
 Annual Report on the Police Administration of the Town of Calcutta and its Suburbs for the year 1881. Fcp. Calcutta, 1882.

Report of the Alipore Reformatory School for the year 1881. Fcp. Calcutta, 1882.

Report on the Charitable Dispensaries under the Government of Bengal for the year 1881. Fcp. Calcutta, 1882.

Archæological Survey of India. Reports, Vol. XIV. 8vo. Calcutta, 1882.

Fourteenth Annual Report of the Sanitary Commissioner for Bengal, for the year 1881; including the Annual Report on Vaccination in Bengal for the year 1881-82. Fcp. Calcutta, 1882.

Report on the Police of the Lower Provinces of the Bengal Presidency for the year 1881. Fcp. Calcutta, 1882.

Report on the Legal Affairs of the Bengal Government for the year 1881-82. Fcp. Calcutta, 1882.

The Indian Forester. Vol. VIII, No. 1, July 1882.

BENGAL GOVERNMENT.

Catalogue of Oriental Coins in the British Museum. Vol. VII. 8vo. London, 1882.

KIRBY, W. F. List of Hymenoptera in the British Museum. Vol. I. 8vo. London, 1882.

BRITISH MUSEUM.

GOONETILLEKE, WILLIAM. Panini's Eight Books of Grammatical Sutras: edited with an English translation and commentary. Vol. I, Part 1. 8vo. Bombay, 1882.

CEYLON BRANCH, ROYAL ASIATIC SOCIETY.

Report on the Vaccine Operations in the Central Provinces, for the year 1881-82. Fcp. Nagpur, 1882.

Report on the Administration of the Central Provinces for the year 1881-82. 8vo. Nagpur, 1882.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Verhandlungen des fünften Internationalen Orientalisten-Congresses gehalten zu Berlin im September 1881. Vol. II, Parts 1-2. 8vo. Berlin, 1882.

THE COMMITTEE, FIFTH INTERNATIONAL ORIENTAL CONGRESS.

Norwegian North-Atlantic Expedition, 1876-78. IV, (1) Historical Account; (2) The Apparatus and how used, by C. Wille. V, (1) Astronomical Observations, by H. Mohn; (2) Magnetical Observations, by C. Wille; (3) Geography and Natural History, by H. Mohn. 4to. Christiania, 1882.

COMMITTEE, NORWEGIAN NORTH ATLANTIC EXPEDITION.

Annual Report of the Department of Mines, New South Wales, for the year 1881. Fcp. Sydney, 1882.

DEPARTMENT OF MINES, SYDNEY.

VII. und VIII. Jahresbericht der Gewerbeschule zu Bistritz in Siebenbürgen. 8vo. Bistritz, 1882.

DIRECTOR, BISTRITZ GEWERBESCHULE.

ASANA, J. D. M. J. Pahlavi, Gujarâti, and English Dictionary. Vol. III. 8vo. Bombay, 1882.

WOLLASTON, ARTHUR N. An English-Persian Dictionary. Compiled from original sources. 8vo. London, 1882.

CARTER, H. VANDYKE. Spirillum Fever (Synonyms, Famine or Relapsing Fever), as seen in Western India. 8vo. London, 1882.

MOORE, F. The Lepidoptera of Ceylon, Parts I and II. 4to. London, 1880-81.

FALLON, S. W. A New English-Hindustani Dictionary, Parts IX-X.

The Indian Antiquary. Vol. XI, Parts 135-137, August to October, 1882.

HOME DEPARTMENT.

Review of the Forest Administration in the several provinces under the Government of India, for the year 1880-81. Fcp. Simla, 1882.

HOME DEPARTMENT, FOREST BRANCH.

MUELLER, F. MAX. Sacred Books of the East, Vols. VIII, XII, XIII and XVI. 8vo. Oxford, 1881-82.

INDIA OFFICE, LONDON.

BAUER, GUSTAV. Gedächtnissrede auf Otto Hesse. 4to. München, 1882.

K. B. AKADEMIE DER WISSENSCHAFTEN, MUENCHEN.

HODGSON, B. H. Ashu Ghosha on Caste, in reply to a Sivite. Translated from the Sanskrit. 8vo. Calcutta, 1882.

REV. K. S. MACDONALD.

Report on Public Instruction in the Madras Presidency for 1880-81. 8vo. Madras, 1882.

WILSON, H. H. The Mackenzie Collection. A Descriptive Catalogue of the Oriental MSS. and other articles illustrative of the Literature, History, Statistics and Antiquities of the South of India; collected by the late Lieut.-Col. Colin Mackenzie, Surveyor General of India. To which is prefixed a brief outline of the life of Col. Mackenzie and of the steps taken to catalogue and utilize his collection. 2nd edition. 8vo. Madras, 1882.

MADRAS GOVERNMENT.

International Meteorological Observations, 25th July, 1880, to 30th April, 1881. 4to. Washington.

Monthly Weather Review, October 1881 to June 1882. 4to. Washington.

METEOROLOGICAL REPORTER TO THE GOVT. OF INDIA.

RAM, HITTU. Biluchi-Namah: a text book of the Biluchi Language. Fcp. Lahore, 1881.

PANJAB GOVERNMENT.

RAI, NAVINA CH. An Elementary Course of Civil Engineering in Hindi.
Part I, General Construction. 8vo. Lahore, 1882.

PANJAB UNIVERSITY COLLEGE.

Catalogue spécial des objets composant l'exposition géographique jointe
à la XIIe. exposition générale de la Société Philomathique de Bor-
deaux. 8vo. Bordeaux, 1882.

SOCIÉTÉ DE GÉOGRAPHIE COMMERCIALE DE BORDEAUX.

St. Xavier's College Observatory. Observations, January to June, 1882.

ST. XAVIER'S COLLEGE OBSERVATORY.

Administration Report of the Government Central Museum, for the year
1881-82. Fep. Madras, 1882.

SUPERINTENDENT, GOVERNMENT CENTRAL MUSEUM, MADRAS.

PERIODICALS PURCHASED.

Benares. Fallon's New English-Hindustani Dictionary,—Parts IX and X.
Berlin. Journal für reine und angewandte Mathematik,—Vol. XCIII,
Nos. 1-2.

———. Sander's Ergänzungs-Wörterbuch der Deutsche Sprache,—Parts
19 and 20.

Calcutta. Calcutta Review,—Vol. LXXV, No. 150, October, 1882.

———. Indian Medical Gazette,—Vol. XVII, Nos. 8-10, August to
October, 1882.

———. Stray Feathers,—Vol. X, No. 4.

Edinburgh. Edinburgh Review,—Vol. CLVI, No. 319, July, 1882.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. VIII, Nos.
7-8.

Giessen. Jahresbericht über die Fortschritte der Chemie,—Part 4, 1880.

Göttingen. Gelehrte Anzeigen,—Nos. 29-40.

———. Nachrichten,—Nos. 15-20.

Leipzig. Annalen der Physik und Chemie,—Vol. XVI, Nos. 8-10.

———. Beiblätter,—Vol. VI, Nos. 6-8.

———. Deutsche Litteraturzeitung,—Vol. III, Nos. 18-29 and 31-33.

———. Hesperos,—Vol. I, No. 24; Vol II, No. 25.

———. Literarisches Centralblatt,—Nos. 19-30 and 32-34.

London. Annals and Magazine of Natural History,—Vol. IX, No. 54;
Vol. X, Nos. 55-56; June to August, 1882.

———. Chemical News,—Vol. XLVI, Nos. 1181-1193.

———. Entomologist,—Vol. XV, Nos. 229-231, June to August, 1881.

———. Entomologist's Monthly Magazine,—Vol. XIX, Nos. 217-219,
June to August, 1882.

———. Journal of Botany,—Vol. XI, Nos. 234-236, June to August,
1882.

- London. *Journal of Science*,—Vol. IV, Nos. 102-104, June to August, 1882.
- . *London, Edinburgh and Dublin Philosophical Magazine*,—Vol. XIII, Nos. 83-84; Vol. XIV, Nos. 85-86.
- . *Mind*,—No. 27, July, 1882.
- . *Messenger of Mathematics*,—Vol. XII, Nos. 1-3, May to July, 1882.
- . *Nineteenth Century*,—Nos. 64-66, June to August, 1882.
- . *Numismatic Chronicle*,—Vol. II (3rd Series), No. 5.
- . *Publishers' Circular*,—Vol. XLV, Nos. 1076-1081.
- . *Quarterly Journal of Microscopical Science*,—Vol. XXII, No. 87, July, 1882.
- . *Quarterly Journal of Pure and Applied Mathematics*,—Vol. XVIII, Nos. 71-72, February and June, 1882.
- . *Quarterly Review*,—Vol. CLIV, No. 307, July, 1882.
- . *Society of Arts*,—*Journal*, Vol. XXX, Nos. 1547-1559.
- . *The Ibis*,—Vol. VI (4th Series), No. 23, July, 1882.
- New Haven. *American Journal of Science*,—Vol. XXIII, Nos. 137-138; Vol. XXIV, Nos. 139-140.
- Paris. *Annales de Chimie et de Physique*,—Vol. XXVI, July and August, 1882; Vol. XXVII, September, 1882.
- . *Comptes Rendus*,—Vol. XCIV, No. 20; and Vol. XCV, Nos. 1-13.
- . *Journal des Savants*,—June to August, 1882.
- . *Revue Critique*,—Vol. XIV, Nos. 28-30, 32-40.
- . *Revue de Linguistique*,—Vol. XV, Fas. 3, 1882.
- . *Revue des deux Mondes*,—Vol. LII, Nos. 2-4; Vol. LIII, Nos. 1-3.
- . *Revue Scientifique*,—Vol. XXX, Nos. 3-15.
- Philadelphia. *Tryon's Manual of Conchology*,—Parts 14-15.

BOOKS PURCHASED.

- ABEL, CARL. *Linguistic Essays*. Svo. London, 1882.
- BARRY, EDWARD M. *Lectures on Architecture delivered at the Royal Academy*. Edited by Alfred Barry. Svo. London, 1881.
- BEAL, SAMUEL. *Abstract of Four Lectures on Buddhist Literature in China delivered at University College*. Svo. London, 1882.
- BOULGER, D. C. *History of China*. Vol. II. Svo. London, 1882.
- CESNOLA, ALEX. PALMA DI. *Salaminia (Cyprus). The History, Treasures, and Antiquities of Salamis in the Island of Cyprus*. With an Introduction by Samuel Birch. 4to. London, 1882.

- COWELL, E. B.; and GOUGH, A. E. *The Sarva-Darsana-Sangraha, or Review of the different Systems of Hindu Philosophy.* By Mádhaba Achárya. 8vo. London, 1882.
- DAVIDS, T. W. RHYS. *The Hibbert Lectures, 1881. Lectures on the Origin and Growth of Religion as illustrated by some points in the History of Indian Buddhism.* 8vo. London, 1881.
- DISTANT, W. L. *Rhopalocera Malayana: a description of the Butterflies of the Malay Peninsula.* Parts I-II. 4to. London, 1882.
- DOBSON, G. E. *A Monograph of the Insectivora; Systematic and Anatomical.* Part I. 4to. London, 1882.
- DU CHAILLU, PAUL B. *The Land of the Midnight Sun: Summer and Winter Journeys through Sweden, Norway, Lapland, and Northern Finland.* Vols. I-II. 8vo. London, 1882.
- DUNCKER, PROF. MAX. *The History of Antiquity.* From the German, by Evelyn Albott. Vols. I-V. 8vo. London, 1877-81.
- DUTT, TORU. *Ancient Ballads and Legends of Hindustan.* With an introductory memoir, by Edmund W. Gosse. 32mo. London, 1882.
- Encyclopædia Britannica.* Ninth Edition. Vol. XIV. 4to. Edinburgh, 1882.
- FLOYER, ERNEST AYSCOGHE. *Unexplored Balúchistan. A survey with observations, astronomical, geographical, botanical, &c., of a route through Mekran, Bashkurd, Persia, Kurdistan, and Turkey.* 8vo. London, 1882.
- Lightning Rod Conference. Report. 8vo. London, 1882.
- LUBBOCK, SIR JOHN. *Ants, Bees, and Wasps: a record of observations on the habits of the Social Hymenoptera.* Second Edition. 12mo. London, 1882.
- . *The Origin of Civilization and the Primitive Condition of Man. Mental and Social condition of Savages.* 8vo. London, 1882.
- MUELLER, F. MAX. *Sacred Books of the East.* Vols. VIII, XII, XIII and XVI. 8vo. Oxford, 1881-82.
- . *Immanuel Kant's Critique of Pure Reason.* In commemoration of the centenary of its first publication. With an historical introduction by Ludwig Noiré. Vols. I-II. 8vo. London, 1881.
- OGLE, W. *Aristotle on the Parts of Animals.* Translated, with Introduction and Notes. 8vo. London, 1882.
- Palaeographical Society. *Facsimiles of Ancient MSS.* Oriental Series. Part VII. Fol. London, 1882.
- Report of the Challenger. *Zoology: Vol. IV.* 4to. London, 1882.
- ROMANES, GEO. J. *Animal Intelligence.* 12mo. London, 1882.
- SCHIEFNER, F. ANTON VON. *Tibetan Tales derived from Indian Sources.* Translated from the Tibetan of the Kah-Gyur. Done into English

- from the German, with an introduction ; by W. R. S. Ralston. 8vo. London, 1882.
- SPENCER, HERBERT. *The Principles of Sociology*. Second Edition. Vol. I. 8vo. London, 1877.
- STEWART, B. ; and TAIT, P. G. *The Unseen Universe or Physical Speculations on a Future State*. Tenth Edition. 12mo. London. 1881.
- . *Paradoxical Philosophy: a sequel to the Unseen Universe*. Second Edition. 12mo. London, 1879.
- WHERRY, REV. E. M. *A Comprehensive Commentary on the Qurán: comprising Sale's translation and preliminary discourse*. Vol. I. 8vo. London, 1882.
- WOLLASTON, ARTHUR N. *An English-Persian Dictionary*. Compiled from original sources. 8vo. London, 1882.
-

PROCEEDINGS

OF THE

ASIATIC SOCIETY OF BENGAL.

FOR DECEMBER, 1882.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 6th December, at 9 P. M.

The HON'BLE H. J. REYNOLDS, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The following presentations were announced :—

1. From the Port Officer, Calcutta,—Return of Wrecks and Casualties in Indian Waters for the year 1881.

2. From K. k. zool.-botanische Gesellschaft, Wien,—Die Laubmoosflora von Oesterreich-Ungarn, by J. Breidler and J. B. Förster.

3. From the Madras Government,—Archæological Survey of Southern India. No. 3. The Amarāvati Stūpa.

4. From the Author,—Sanskrit Wörterbuch in kürzerer Fassung, Vol. III, No. 2, by Otto Böhtlingk.

5. From the Hungarian Academy,—Magyar-Ugor összehasonlító Szótár, Vol. V, by József Budenz.

6. From the Royal Society, London,—Catalogue of the Scientific Books in the Library of the Royal Society. Transactions, Journals, Observations and Reports, Surveys, Museums.

7. From the Smithsonian Institution,—List of Foreign Correspondents of the Smithsonian Institution. Corrected to January, 1882.

8. From the Home Department,—The Plants and Drugs of Sind, by James Murray.

9. From the Dept. of Mines, Sydney,—Mineral Products of New South Wales, by Harrie Wood; Notes on the Geology of New South Wales, by C. S. Wilkinson; Description of the Minerals of New South Wales, by Archibald Liversidge; Catalogue of Works, Papers, Reports and Maps on the Geology, Palæontology, Mineralogy, &c., &c., of the Australian Continent and Tasmania, by Robert Etheridge and Robert Logan Jack.

The following gentlemen duly proposed and seconded at the last meeting were ballotted for and elected Ordinary Members:

W. R. H. Merk, Esq.

Walter Lawrence, Esq.

The following gentlemen are candidates for election at the next meeting:

1. Major Trevor Plowden, B. S. C., Simla, proposed by D. Ibbetson, Esq., seconded by J. Wilson, Esq.

2. Francis H. Harding, Esq., C. S., Tajpore, Darbhanga, proposed by A. Pedler, Esq., seconded by Dr. H. W. M'Cann.

The following gentleman has intimated his desire to withdraw from the Society:

Ney Elias, Esq.

The COUNCIL reported that P. C. Wheeler, Esq., C. S., Allababad, had, after repeated applications, refused to pay his subscription for a period for part of which he had received the publications of the Society, and his name would in consequence be suspended for a month in the Society's rooms as a defaulter.

The PRESIDENT announced that Dr. J. Scully had kindly consented to act as Natural History Secretary.

The PRESIDENT announced that the Council recommended certain changes in the Rules as set forth in the following circular which had been forwarded to all resident members, according to Rule 64 A:—

"In accordance with the procedure prescribed in the Rules of the Society (64, 65, 76), the Council circulate to the resident Members the following statement of certain proposed changes in the Rules and of the reasons which induce Council to recommend them.

"The Council propose to insert in Rule 15, after the word 'Rule,' the words 'and to serve on any Committee appointed by Council': and after the word 'vote,' the words 'except on such Committees': also, in Rule 61, to insert, after the word 'appoint', the words 'Honorary or Associate Members, or', and to omit the comma after the words 'Ordinary Members'. These two Rules as they are at present read as follows:—

"RULE 15. Honorary and Associate Members shall be entitled to the privileges contained in Clauses (a), (d), and (f) of the preceding Rule, save that they shall not be entitled to vote.

"RULE 61. The Council may elect, from among their own body, Committees or Sections for the consideration of special subjects. They also may appoint Ordinary Members, other than Members of Council, who are competent and well versed in the subjects to be referred to these Committees, to be Members of such Committees.

"With the proposed changes, they will read :—

"**RULE 15.** Honorary and Associate Members shall be entitled to the privileges contained in Clauses (e), (d) and (f) of the preceding Rule, and to serve on any Committee appointed by Council, save that they shall not be entitled to vote, except on such Committees.

"**RULE 61.** The Council may elect, from among their own body, Committees or Sections for the consideration of special subjects. They may also appoint *Honorary or Associate Members*, or Ordinary Members other than Members of Council, who are competent and well versed in the subjects to be referred to these Committees, to be Members of such Committees.

"According to the Rules as they are at present, no Honorary or Associate Member can serve on any of the Committees appointed by Council. The Society is thus prevented from obtaining the advice of several gentlemen in close connection with the Society who are experts in their several subjects, and no compensating benefit accrues from the observance of these Rules. The question is now raised because it has been lately pointed out that Major-General A. Cunningham, Director General of the Archaeological Survey of India, who has for many years been a Member of the Philological and Coins Committees of the Society, is an Honorary Member and therefore cannot serve on a Committee. General Cunningham's advice and opinion on all matters relating to coins and antiquities have been, and are of immense service to the Society, and the Society's Secretaries regularly avail themselves of his assistance as a member of these Committees, as may be seen from consulting the Society's Proceedings. But now that the attention of Council has been drawn to the two Rules in question, it will be impossible to re-elect General Cunningham a Member of these Committees, unless the Rules are altered as above. So that an observance of those Rules will result in distinct injury to the Society. And, besides the case of General Cunningham, there are other cases in which the Rules prevent the Society from securing the advice of scientific experts, such as Father Lafont, who would gladly assist the Society with their opinion, but are prevented from sitting on Committees owing to the undoubted meaning of the Rules. The Council therefore strongly recommend the above changes. The Society's Committees are consultative bodies and have not the power to take any initiative of themselves : they merely advise Council on matters on which Council seeks their opinion before itself coming to a decision. This being the case, Council are of opinion that there cannot possibly be any objection to strengthening these consultative bodies by adding to them such Honorary or Associate Members as are experts in their several subjects.

"The proposed changes will be brought up for discussion at the Ordinary General meeting of the Society on Wednesday, December 6th. Voting papers will be afterwards issued to all members, resident and non-resident, containing, in addition to this statement of the Council's reasons for recommending the change, a statement of any objections that may be raised to the proposal at this meeting. The votes will be finally taken at the February meeting of the Society."

The changes proposed by the Council were unanimously approved by the meeting.

The SECRETARY read the following extracts from a letter from Mr. D. Ibbetson, Deputy Commissioner of the Punjab Census, Lahore, forwarding a memorandum asking for information regarding the Ethnology of the Panjab :

"My object in addressing you is to ask you to help me in the inquiry I have undertaken,—an inquiry which will probably occupy my leisure for several years. What I would beg you to do is this: *whenever you come across any interesting facts regarding any caste or clan or its customs, make a rough note of them at once and on the spot, before they are forgotten, and send it to me.* It does not matter how rough the notes are; but notes regarding separate castes or clans should be, if possible, *on separate pieces of paper.* It does not matter how absurd the story told you, or how seemingly trivial the facts collected. Caste legends generally have some substratum of truth, which can often be eliminated by comparing different forms of the same story derived from various sources; and an independent confirmation of even the smallest detail is often valuable.

"It is in the power of every one to help, if he cares to do so. Even officers who do not travel about among the people constantly come across curious facts and customs in the course of trials and investigations, while the natives are often more communicative to those who do not hold an official position than to those who do.

"The following are some of the points which may usefully be noted:—

"Name of the tribe or caste; names of its sub-divisions; localities in which it is found in largest numbers; different names by which it is known, often varying with the religion; its traditional mode and place of origin; its course of migration, and especially the place whence it came direct to its present home; the religions followed by its members; whether, if not Hindus, they employed Bráhmans, and in what manner; any traditions or customs connecting them with, or involving reverence for, any particular plant or animal; whether they practise *karewa* or widow-marriage; what castes or tribes they may or may not intermarry with; what their position is in the social scale; what occupations they principally follow, and whether they vary with the religion.

"Information regarding the vagrant, servile, and out-caste tribes and the people of the hills is especially needed; while little is known of the internal constitution, and government by means of standing *pancháyats*, of the menial and artisan castes and trade-guilds.

"The religion of the peasantry is something very different from the Hinduism of books; while their social customs have been handed down almost unaltered from remote ages. All facts regarding their gods and saints and the mode in which they worship them, the omens they regard, the superstitions they are ruled by, their ceremonial at births, deaths, betrothals, marriages, and adoption, the relations between members of a family, and in fact their customs and ways of life generally, are always most interesting and often exceedingly valuable. The inhabitants of the Punjab have been drawn from many sources at various periods; and our best hope

of tracing each tribe back to its original stock lies in collecting and comparing their customs and traditions. *Most valuable of all are what may be called differential customs ; that is to say, points in which the customs of one tribe differ from those of its neighbours.* Peculiarities in even such minor respects as dress, jewels, food, drink, and the like, often afford useful indications.

"Local songs and proverbs, which should be taken down exactly as spoken by the people, are full of interest. Fairs and festivals are important and generally have some religious significance. New sects and ascetic orders are springing up daily ; while little is known about many of the old ones. In fact it is impossible to mention any part of the life of the people regarding which information is not needed, and may not give valuable help.

"In the hope that it may be useful to some such, I have prepared a rough memorandum on the points to which, so far as I know, inquiry may be most usefully directed. I shall be glad to send any body a copy of it who will let me have a post-card to say that he would like one."

LIEUT.-GENL. J. T. WALKER gave intimation of the return of a party of explorers from Tibet, with a sketch of the line of exploration. He informed the meeting that, five years ago, he made arrangements to send one of the Trans-Himalayan explorers of the Survey Department into the regions of Northern Tibet which are crossed by the parallel of 40° of latitude. In those days, Prejevalsky had not yet made his famous journey from Guldja to Lob Nur, and there was a great belt of territory between Eastern Turkestan and Mongolia which was almost absolutely unknown. A native of India who had accompanied the celebrated Pandit Nain Singh in his explorations was especially trained by the Pandit to undertake this new exploration. He started from India in the summer of 1878 with two companions ; for a long time no tidings were received of him ; but about a year ago very distressing rumours reached Nain Singh to the effect that the explorer and his companions had been seized by the authorities at Lassa, that one of his companions who was a Tibetan had been put to death for having brought a foreigner into the country, and that he himself had had his legs broken in order to put it out of his power to make further explorations. Happily this tale turned out to be a pure fabrication, concocted very probably by his second companion who had meanwhile robbed and deserted him. In May last, tidings were received from the Vicar Apostolic of Tibet, who resides at Ta-Tsien-lu, that the explorer had reached Ta-Tsien-lu in safety last February, and that he was about to return to India by the direct route *via* Assam. He reached

Calcutta a few days ago, bringing with him not only his journals, but his instruments, which he has managed to secrete and preserve in some wonderful manner, notwithstanding that on two occasions he was robbed of the greater portion of his property.

He has taken a number of astronomical and boiling point observations and kept up a more or less continuous record of bearings and distances along the line of his traverse. Some time must elapse before his observations can be reduced and plotted; thus General Walker was not in a position to give the meeting any very definite information regarding the geographical results of this last and most important exploration. He would, however, briefly indicate the general direction of the lines of operation.

The explorer, after spending some time at Lassa in purchasing merchandise for sale in the regions to which he was bound and making arrangements to join a *kafila* of traders returning to Mongolia, eventually succeeded in making a good start. He accompanied the *kafila* as far as a place called Thingali, which may be some 150 miles to the west of the Lake Koko Nur; there, in December, 1879, the *kafila* was attacked by a band of some hundred mounted men of the Chiamogolak tribe; they robbed the explorer of most of his property, but had the grace to leave him about Rs. 200 worth of merchandise wherewith to prosecute his enterprise, and they did not appropriate his surveying instruments.

From Thingali he struck off to the North-West, and eventually reached a place called Saithang, where he had to wait for the formation of a *kafila* of travellers proceeding towards Lob Nur; there he was deserted by one of his companions who robbed him of most of his little remaining property and his telescope. Though left nearly destitute, he was resolved not to turn back if he could by any means avoid doing so. He and his remaining companion therefore took service with some Mongolians and tended their herds of horses for some months. Eventually they determined to move on with the limited funds at their disposal, and when these failed to beg their way. They advanced to a place called Saitu, which may possibly be identical with Marco Polo's Sachi; there they were detained seven months by Chinese Tartars whom they were compelled to serve. Eventually a friendly Lama came to their assistance and rescued them, and in his service they returned to Saithang and proceeded south-eastwards to Barong Chaidam—some 100 miles to the west of Lake Koko Nur,—and then southwards 300 miles to the Thuden Gumpa Monastery. There they entered the service of a Chinese Tartar whom they accompanied to Darchendo, or Ta-Tsien-lu, where they were kindly welcomed and helped by the Jesuit Fathers. They then commenced their return journey to India. Proceeding *via* Batang and Dzayul, they reached Sama, a village on the eastern border of the country of the Mishmis; they endeavoured to make arrangements to cross the belt of Mishmi country between Sama and the British

Frontier, but did not succeed in so doing ; and being told that they would probably be murdered if they trusted themselves to such savages as the Mishmis, they turned northwards and took the circuitous route through southern Tibet towards Lassa, *viâ* Alanto and Giamda, as far as the latter place, from which they turned down south-westwards to Chetang on the Sanpo river, avoiding Lassa. Thence they proceeded *viâ* Giangze Jong and Phari to Darjeeling, returning safely to British territory after an absence of more than four years.

The explorer states that Sama, the village on the Mishmi border at which they turned away from the direct route to Assam, is situated on a river flowing into Assam, and is the place at which two Padre Sahibs were murdered some thirty years ago. Thus it is identified with the Sami of the Rev. T. D. Mazure, Vicar Apostolic of Tibet, in his memorandum on the countries between Thibet, Yunan and Burma—in volume XXX of the Journal of the Asiatic Society—in which he speaks of it as the place where the two priests, Messrs. Krick and Boury, were murdered. The Vicar was, however, under the impression that his Sami was situated in the valley of a river flowing into the Irawadi ; but Colonel Yule, in his notes to the Vicar's paper, points out that we know from the reports of the British officers in Upper Assam that the two priests were murdered (about the month of August, 1854) at a village, called Simé in Wilcox's map, which is situated on the banks of the Bramakund river, the Eastern Brahmaputra, and he goes on to say that "this murder of two missionaries becomes thus in fact the basis of a geographical connection between British India and Thibet." This remark is even more apposite at the present time than it was originally ; for the murder of the missionaries enables us to identify with certainty the nearest point to the British frontier which was reached by the explorer on his attempt to return to India *viâ* Assam. Wilcox reconnoitred the Brahmakund river up as far as the village of Samleh, and he obtained the positions of several of the villages higher up from native information ; thus it appears that his Simé was about 18 miles beyond Samleh ; for this portion of the river we as yet have no route survey ; but the distance is so short that we may accept the position assigned to Simé in Wilcox's map without hesitation.

This being the case, the fact that the explorer was unable to proceed to India directly through the Mishmi country, but was compelled to make a considerable detour to the north, has been the means of our acquiring much additional geographical information, and more particularly of laying at rest the frequently mooted question whether the great Sanpo river of Tibet flows into the Irawadi river or into the Brahmaputra. If the former, the explorer must have crossed it three times, first between Batang and Sama, secondly between Sama and Alanto, and finally at Chetang. He

maintains that he only crossed it at Chetang, and that to the west of his route between Sama and Alonto there is a great range of hills forming the water-parting between the affluents of the Sanpo river and those of the well-known system of parallel Tibetan rivers which he crossed between Batang and Sama. He knows the Sanpo river well and has crossed it frequently and in various places, and he is satisfied that none of the affluents of the system of parallel rivers which he crossed can possibly be the Sanpo.

A full account of his explorations will be published, with maps in illustration, as soon as possible, probably within six months. Meanwhile, however, this statement of general outlines will suffice to show that the explorer has worked with great pluck and perseverance, never allowing himself to be turned back by misfortune and disaster until he had succeeded in accomplishing a highly creditable amount of work, and meanwhile taking service with Mongolians, Lamas and Chinese Tartars, with a view to earn a livelihood for himself and his companion while carrying out their explorations.

The following papers were read—

1. *The Delhi Daláls and their Slang.*—By LIEUT. R. C. TEMPLE, B. S. C., F. R. G. S., M. R. A. S.

(Abstract.)

In this paper the author has endeavoured to elucidate the derivation of some of the slang words used by the well-known Delhi daláls and to show how far their words affect the dialects in use among Northern Indian traders. He gives an account of the daláls and their way of making a living, which is not by brokerage, but by what they can make out of the customer through the trader, and what the customer pays them for their trouble. The author mentions the different ways in which the dalál comes to a secret understanding with the trader as to the amount of commission he is to receive, and gives a list of slang words used by him with their meanings.

2. *The Rupees of the months of the Ilahi years of Akbar.*—By C. J. RODGERS.

(Abstract.)

The Persian year was instituted by Yezdegird III, eight days after the death of Muhammad. The year was divided into 365 days. There were twelve months, each of which had 30 days except the twelfth which had 35 days. The fractions of the days in 120 years made another month, so that every 120 years there were 13 months in the year. On the first such occurrence, the first month was duplicated: on the second, the second month, and so on. Malik Shah, Sultan of Khorasan, improved somewhat on this system. Making his year commence with the entrance of the Sun into Aries, he ordered that the year should receive an

additional day whenever it was required. This was mostly as with us—every fourth year. But after the day had been added seven or eight times the addition was postponed for a year. In the 30th year of Akbar, i. e. in 992 A. H., Hakim Faṭḥ Ullah Shīrāzī introduced a new era and year for India. The object in view was to create a uniform year throughout the vast empire Akbar had conquered. The era began with the reign of Akbar, i. e., on 19th February, 1556. The months and days were similar to those of the Persian year, but there were no intercalary days. Hence the days of this year never corresponded with the years of Malik Shah's era. This year was termed "*Ilahi*"—up to the year 992 A. H.

Akbar's coins are strictly orthodox in their inscriptions. The name and titles of the emperor occupy the obverse, the margins, containing the mint, &c., being in nearly all cases illegible. The reverse has the Kalimah, and its fragmentary margins are embellished with portions of the names of the four companions of Muhammad. From the 30th year of Akbar's reign coins with the Ilahi years on them began to be struck. On these coins, instead of the Kalimah the following sentence is given: "God is the greatest, may His brightness shine forth." The inscription is completed by the name of the mint and the year and the month in which the coin was struck. Mr. Rodgers in this paper gives descriptions of rupees of each month of the same years.

3. *Second list of Butterflies taken in Sikkim in October, 1882, with notes on habits, &c.*—By LIONEL DE NICÉVILLE.

(Abstract.)

In this list 203 species of Butterflies are enumerated, most of which were met with at a low elevation. One new species is described, and a second species which had been figured under an erroneous name, is re-named. The author points out the probable locality where most of the species of Butterflies which come from Sikkim are collected, and also one of the modes the Lepchas adopt to capture these specimens.

LIBRARY.

The following additions have been made to the Library since the Meeting held in November last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS.

presented by the respective Societies and Editors.

- Baltimore. Johns Hopkins University,—*American Journal of Philology*, Vol. III, No. 10.
- Berlin. K. Akademie der Wissenschaften,—*Abhandlungen*, 1880-1881.
- . K. preussische Akademie der Wissenschaften,—*Sitzungsbericht*, Nos. 18-38, April to July, 1882.
- Bombay. Indian Antiquary,—Vol. XI, Part 138, November, 1882.
- Budapest. Hungarian Academy,—*Almanach*, 1882.
- . ———. *E'rtkezések a Nyelv-es Szép Tudományok Köréből*,—Vol. IX, Parts 6-12, 1881.
- . ———. *E'rtésítője*,—Parts 1-8.
- . ———. *E'vkönyvei*,—Vol. XVI, Part 7.
- . ———. *Nyelvtudományi Közlemények*,—Vol. XVI, Parts 2-3; Vol. XVII, Part 1.
- . *Ungarische Revue*,—Parts 5-12, May to December, 1881; and Parts 1-6, January to June, 1882.
- Calcutta. Geological Survey of India,—*Records*, Vol. XV, Part 4, 1882.
- . *Meteorological Observations recorded at six stations in India*, during December, 1881.
- Cambridge. American Philological Association,—*Proceedings*, July, 1882.
- . ———. *Transactions*,—Vols. I-XII, 1869-81.
- Copenhagen. K. Nordiske Oldskrift-Selskab,—*Aarboger for Nordisk Oldkyndighed og Historie*, Part 2, 1880; Parts 1-4, 1881.
- . ———. *Tillæg til Aarboger for Nordisk Oldkyndighed og Historie*, 1879-80.
- . ———. *Mémoires*, 1880-81.
- Florence. Archivio per l' Antropologia e la Etnologia,—Vol. XII, Part 2.
- Halle. Kaiserliche Leopoldino-Carolinische Deutsche Akademie der Naturforscher,—*Leopoldina*, Vols. III-IV, and X-XVII.
- . ———. *Verhandlungen*, Vols. XXX-XXXVIII.
- Lahore. Journal of the Anjuman-i-Panjab,—Vol. II, Nos. 42, 44-48.
- Leipzig. Deutsche Morgenländische Gesellschaft,—*Zeitschrift*, Vol. XXXVI, Part 2.

- Liège. Société Géologique de Belgique,—Annales, Vol. V, 1877-78.
- London. Academy, Nos. 545-549.
- . Athenæum, Nos. 2868-2872.
- . Institution of Mechanical Engineers,—Minutes of Proceedings, Vol. LXIX, Part 3.
- . Linnean Society,—Proceedings, November, 1875 to June, 1880.
- . ———. Journal,—Botany, Vol. XIX, Nos. 114-121.
- . ———. Zoology,—Vol. XV, Nos. 86-88; and Vol. XVI, Nos. 89-94.
- . ———. Transactions,—Botany, Vol. II (2nd Ser.), Part 1.
- . ———. Zoology,—Vol. II (2nd Ser.), Parts 3-5.
- . Nature,—Vol. XXVI, Nos. 676-678; and Vol. XXVII, Nos. 679-680.
- . Royal Geographical Society,—Proceedings, Vol. IV, Nos. 9-10, September and October, 1882.
- . Royal Society,—Philosophical Transactions, Vol. CLXXII, Parts 2-3; and Vol. CLXXIII, Part 1.
- . ———. List of Fellows,—November, 1881.
- . Society of Telegraph Engineers,—Journal, Vol. XI, No. 43, September, 1882.
- . Zoological Society,—Proceedings, Part 2, 1882.
- . ———. List of Fellows,—June, 1882.
- Lyon. Société d'Agriculture, Histoire Naturelle et Arts Utiles,—Annales, Vol. III (5th Series), 1880.
- . Société d'Anthropologie,—Bulletin, Vol. I, 1881-82.
- Munich. Repertorium für Experimental-Physik,—Vol. XVIII, No. 10.
- Paris. Journal Asiatique,—Vol. XX, No. 1, July, 1882.
- . Société de Géographie,—Bulletin, Vol. III, No. 2, 1882.
- . ———. Compte Rendu des Séances,—No. 17, 20th October, 1882.
- Philadelphia. Academy of Natural Sciences,—Proceedings, Parts 1-3, January to December, 1881.
- Pisa. Società Toscana di Scienze Naturali,—Atti, Processi Verbali, 2nd July, 1882.
- Rome. Società degli Spettroscopisti Italiani,—Memorie, Vol. XI, No. 8, August, 1882.
- Roorkee. Professional Papers on Indian Engineering,—Ser. III, Vol. I, No. 1.
- Shanghai. North China Branch of the Royal Asiatic Society,—Journal, Vol. XVII, Part 1, 1882.
- St. Petersburg. L'Académie Impériale des Sciences,—Bulletin, Vol. XXVIII, No. 1.
- . ———. Mémoires,—Vol. XXX, Nos. 3 and 5.

Washington. Geological and Geographical Survey of the Territories,—
Bulletin, Vol. VI, No. 3.

———. War Department, Signal Service,—Professional Papers,
No. 7.

MISCELLANEOUS PRESENTATIONS.

BOEHTLINGK, OTTO. Sanskrit Wörterbuch in kürzerer Fassung. Vol. III,
No. 2. 4to. St. Petersburg, 1882.

THE AUTHOR.

Report on the Land Revenue Administration of the Lower Provinces for
the official year 1881-82. Fcp. Calcutta, 1882.

Annual Report on Emigration from the Port of Calcutta to British and
Foreign Colonies for 1881-82. Fcp. Calcutta, 1882.

Annual Report on Inland Emigration for the nine months ending with
1881. Fcp. Calcutta, 1882.

Report on the Administration of the Registration Department in Bengal
for the year 1881-82. Fcp. Calcutta, 1882.

Report on the Administration of the Salt Department for the year 1881-82.
Fcp. Calcutta, 1882.

Report on the Administration of the Customs Department in the Bengal
Presidency for the official year 1881-82. Fcp. Calcutta, 1882.

Indian Forester,—Vol. VIII, No. 2, October, 1882.

BENGAL GOVERNMENT.

MURRAY, JAMES A. The Plants and Drugs of Sind. 8vo. London, 1881.
The Indian Antiquary, Vol. XI, Part 138, November, 1882. 4to. Bom-
bay, 1882.

HOME DEPARTMENT.

BUDENZ, JOZSEF. Magyar-Ugor összehasonlító Szótár. Vol. V. 8vo.
Budapest, 1881.

HUNGARIAN ACADEMY.

BREIDLER, J.; AND FOERSTER, J. B. Die Laubmoosflora von Oesterreich-
Ungarn. 8vo. Vienna, 1882.

K. K. ZOOL. BOTAN. GESELLSCHAFT, WIEN.

Archæological Survey of Southern India. No. 3. The Amaravati Stūpa.
4to. Madras, 1882.

MADRAS GOVERNMENT.

WASHINGTON. War Department, Signal Service, International Meteorolo-
gical Observations, 1st May to 30th June, 1882.

METEOBLOGICAL REPORTER TO THE GOVERNMENT OF INDIA.

Report on the Revised Land Revenue Settlement of the Rohtak District

of the Hissar Division in the Panjab, effected by Messrs. W. E. Purser and H. C. Faushawe, 1873-79. With maps. Svo. and Folio. Lahoro 1880.

PANJAB GOVERNMENT.

Return of Wrecks and Casualties in Indian Waters for the year 1881
Fep. Calcutta, 1882.

PORT OFFICER, CALCUTTA.

Catalogue of the Scientific Books in the Library of the Royal Society.
Transactions—Journals—Observations and Reports—Surveys—Museums.
Svo. London, 1881.

ROYAL SOCIETY OF LONDON.

List of Foreign Correspondents of the Smithsonian Institution. Corrected
to January 1882. Svo. Washington, 1882.

THE SMITHSONIAN INSTITUTION.

PERIODICALS PURCHASED.

Berlin. Deutsche Litteraturzeitung,—Nos. 30, 34-39, 1882.

———. Sander's Ergänzungs-Wörterbuch der deutsche Sprache,—Parts
17, 18, 21, 22.

Calcutta. Indian Medical Gazette,—Vol. XVII, No. 11, November, 1882.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. VIII, Nos.
9-10.

Göttingen. Gelehrte Anzeigen,—Nos. 41-46.

Leipzig. Annalen der Physik und Chemie,—Vol. XVII, No. 3.

———. Beiblätter,—Vol. VI, No. 9.

———. Hesperos,—Vol. II, Nos. 26-32.

———. Litterarisches Centralblatt,—Nos. 31, 35-40.

London. Annals and Magazine of Natural History,—Vol. X, Nos. 57-58.

———. Chemical News,—Vol. XLVI, Nos. 1194-1198.

———. Entomologist,—Vol. XV, Nos. 232-233.

———. Entomologist's Monthly Magazine,—Vol. XIX, Nos. 220-221.

———. Journal of Botany,—Vol. XI, Nos. 237-238, September and
October, 1882.

———. Journal of Science,—Vol. IV, Nos. 105-106, September and
October, 1882.

———. London, Edinburgh and Dublin Philosophical Magazine,—Vol.
XIV, Nos. 87-88, September and October, 1882.

———. Messenger of Mathematics,—Vol. XII, No. 4, August, 1882.

———. Mind,—No. 28, October, 1882.

———. Nineteenth Century,—Vol. XII, Nos. 67-68, September and
October, 1882.

- London. Numismatic Chronicle,—Vol. II (3rd Series), Part 2, 1882.
 ———. Publishers' Circular,—Vol. XLV, Nos. 1082-83.
 ———. Society of Arts,—Journal, Vol. XXX, Nos. 1560-1564.
 ———. Westminster Review,—Vol. CXVI, Nos. 119-120, July and October, 1881; Vol. CXVII, Nos. 121-122, January and April, 1882; and Vol. CXVIII, No. 123, July, 1882.
 New Haven. American Journal of Science,—Vol. XXIV, No. 141, September, 1882.
 Paris. Annales de Chimie et de Physique,—Vol. XXVII, October, 1882.
 ———. Comptes Rendus,—Vol. XCV, Nos. 14-18.
 ———. Journal des Savants,—September, 1882.
 ———. Revue Critique,—Vol. XIV, Nos. 41-45.
 ———. Revue des deux mondes,—Vol. LIII, No. 4; and Vol. LIV, No. 1.
 ———. Revue de Linguistique,—Vol. XV, Fasc. 4.
 ———. Revue Scientifique,—Vol. XXX, Nos. 16-20.

BOOKS PURCHASED.

- GODWIN-AUSTEN, LIEUT.-COL. H. H. Land and Freshwater Mollusca of India. Supplementary to Messrs. Theobald and Hanley's Conchologia Indica, Parts I and II. 4to. London, 1882.
 GOULD, JOHN. The Birds of New Guinea, Part XIII. Fol. London, 1882.
 MARSHALL, MAJOR G. F. L.; AND DE NICEVILLE, LIONEL. The Butterflies of India, Burmah and Ceylon. Vol. I, Part 1. 8vo. Calcutta, 1882.
 Report on the Scientific Results of the Voyage of H. M. S. "Challenger" during the years 1873-76. Narrative. Vol. II. 4to. London, 1882.
 SPENCER, HERBERT. Principles of Sociology. Parts IV and V. 8vo. London, 1879-82.
 STALLO, J. B. The Concepts and Theories of Modern Physics. 8vo. London, 1882.
-

INDEX

TO

PROCEEDINGS, ASIATIC SOCIETY OF BENGAL, FOR 1882.

| | <i>Page</i> |
|---|-------------|
| <i>Achatina</i> | 62 |
| Adamson (Capt. C. H. E.), information regarding the <i>Danainæ</i> supplied by | 142 |
| Adoni pagodas | 142 |
| Afghanistan, coins from | 143 |
| Agui Purāṇa | 27 |
| Ahmad (Maulvi Kabiruddin), member of the Philological Committee | 57 |
| Akbarnāmah | 27, 29 |
| Akbar, rupees of the Ilahi years of | 162 |
| Akyab, butterflies from | 142 |
| Alekh, description of followers of | 2 |
| Alexander (J. W.), withdrawal of | 2 |
| Ali (Hon. Sayyid Amir), member of the Philological Committee | 57 |
| <i>Amorphoscelis annulicornis</i> | 116 |
| <i>Anadenus</i> | 62 |
| <i>Anchitherium</i> | 115 |
| Anderson (Dr. J.), member of the Natural History Committee | 57 |
| Andrabhṛitya dynasty, coins of | 58 |
| <i>Aneitea</i> | 62 |
| Animals, on the habits and instincts of some | 106 |
| Annual Meeting | 21 |
| „ report | 21 |
| Antlers in Ruminants, on evolution of | 71 |
| Āpastamba Srauta Sūtra | 26, 28, 30 |
| Arab voyages to India in the Ninth Century | 64, 82 |
| <i>Arachnides</i> | 59 |
| <i>Arion</i> | 61 |
| <i>Ariophanta</i> | 62 |
| Arrow heads, stone | 8 |
| Kṛyabhāṭa, mathematical treatise of... .. | 110 |
| Āśādāma, coins of... .. | 41 |

| | <i>Page</i> |
|--|-------------|
| Asiatic <i>Clausilia</i> , on some new | 92 |
| Aśoka inscriptions | 108 |
| Asritas | 5, 6 |
| Associate members, change in rules regarding | 156 |
| " " election of | 90, 94 |
| <i>Athoracophorus</i> | 62 |
| Atridāma, coins of | 41, 114 |
| <i>Austenia</i> | 62 |
| Awns of spear grass, torsion in the | 49 |
| Axes, stone | 6 |
| Baiswāri | 95 |
| Bakhshālī, birchbark MS. from | 108 |
| Balbarā, on the Indian | 82 |
| Banerjea (Rev. K. M.), member of the Philological Committee | 57 |
| Bank-note of the Ming dynasty | 77 |
| Barclay (Dr. A.), elected an Ordinary Member | 140 |
| Barsom of Magus... .. | 144 |
| Beale's Oriental Biographical Dictionary | 30 |
| Beames (J.), member of the Philological Committee | 57 |
| Bengal, letter forwarding description of followers of Alekh, from the Government of | 2 |
| Bhattacharjya (Rev. Jagadiswar), presentation of coin from Mahanada by | 108 |
| Bhava-gupta | 10 |
| Bhojpūri | 95 |
| Bibliotheca Indica Series, report on... .. | 26 |
| " " work accepted for publication in the | 94 |
| Bidie (Dr. G.), on the Pagoda or Varāha coins of Southern India | 141 |
| Bihāri declension and conjugation | 95 |
| Bijanagar pagodas | 141 |
| Birch-bark MS. | 108 |
| Blackburn (J.), withdrawal of... .. | 56 |
| Blanford (H. F.), elected Member of Council | 39 |
| " " elected Vice-President | 91 |
| " " member of Library and Physical Science Committees | 57, 58 |
| Blanford (W. T.), compounds for future subscriptions... .. | 90 |
| " " member of the Natural History Committee | 58 |
| Bomford (Dr. G.), withdrawal of | 76 |
| Bones associated with stone implements, fossil | 8 |
| Borera, flint | 8 |

| | Page |
|---|----------|
| Bose (P. N.), on pottery found at Mahesar | 105 |
| Bracelets from near Kawat, gold | 144 |
| <i>Brachysaura ornata</i> | 50 |
| Brahmagupta, mathematical treatise of | 110 |
| Brahma Sphuṭa Siddhānta | 111 |
| Brandis (Dr. D.), member of the Natural History Committee | 58 |
| Bṛihaddevatā | 28 |
| Buddhism in Mongolia, on the rise and progress of | 82, 92 |
| " in Thibet, rise and progress of | 50 |
| Buddhist coins | 112, 141 |
| " Nepalese MSS. presented by Mr. B. H. Hodgson, catalogue of, by Dr. Mitra | 140 |
| " sculptures | 95 |
| Building, report on | 25 |
| <i>Bulimulus</i> | 62 |
| <i>Bulinus</i> | 62 |
| Butterflies of India, notes on the | 142 |
| " by Lepchas, mode of capture of | 163 |
| " taken in Sikkim | 163 |
| <i>Cæliaxis</i> | 62 |
| <i>Caldwellia (philyrina)</i> | 62 |
| Camel, Nematoid hæmatozoon discovered in a | 63 |
| Cappel (A. J. L.), member of the Physical Science Committee | 58 |
| Cash, Chinese | 141 |
| Catalogue of the Library, report regarding | 25 |
| Celts | 6, 95 |
| <i>Cervinæ</i> | 71 |
| <i>Cervulus</i> | 71 |
| Chalmers (J. B.), elected an Ordinary Member | 90 |
| Chalukya coins | 141 |
| Chambers (Dr. E. W.), withdrawal of | 76 |
| Chandra Gupta II, coin of | 91 |
| Changes in the Rules | 156 |
| Charaka | 29 |
| Chaturvarga Chintamani | 28, 29 |
| Chhindwara, coins from | 114 |
| Chinese bank-note | 77 |
| " coin | 113 |
| Chisels, flint | 8 |
| Chitaldroog pagoda | 141-2 |
| <i>Chæradodis brunneri</i> | 116 |

| | Page |
|---|--------|
| <i>Circaetus gallicus</i> | 106 |
| <i>Clausilia</i> | 62 |
| " <i>andersoniana</i> | 92 |
| " (<i>cylindrophædusa</i>) <i>micropeas</i> | 92 |
| " <i>gracilispira</i> | 92 |
| " (<i>Hemiphaedusa</i>) <i>subulina</i> | 92 |
| " <i>insignis</i> | 92 |
| " from the Nicobars, on a new species of | 82 |
| <i>Clausilia</i> , Japanese | 14 |
| " on some new Asiatic | 92 |
| <i>Coassus rufus</i> | 71 |
| <i>Cochlostyla</i> | 62 |
| Cockburn (J.), exhibition of a Panchamukha Lingam | 47 |
| " on an abnormality in the horns of the Hog-deer | 71 |
| " on Buddhist sculptures | 95 |
| " on polydactylism in a horse | 115 |
| " on pottery found at Mahesar | 105 |
| " on the habits and instincts of some animals | 106 |
| " on the habits of a little known lizard, <i>Brachysaura</i> <i>ornata</i> | 50 |
| " on torsion in the awns of spear grass | 49 |
| " silver coins from near Kilwee, forwarded by | 47 |
| " stone implements found by | 6, 8 |
| Coin Cabinet, report on | 25 |
| Coins, 41, 46, 47, 56, 58, 91, 104, 107, 111, 114, 138, 141, 143, 144, | 162 |
| Committees, election of Honorary and Associate Members as mem- bers of | 156 |
| Copper-plate grant from Cuttack | 9 |
| Colville (Sir J. W.), death of, announced | 22 |
| Council, abstract of proceedings of, during 1881 | 32 |
| " election of | 39 |
| " report of... .. | 21 |
| <i>Oraspedophora</i> | 61 |
| Crayfish, green gland of the | 60 |
| Croft (A. W.), elected member of Council | 91 |
| " member of the Library Committee | 57 |
| Crooke (W. M.), withdrawal of | 140 |
| <i>Crux ansata</i> | 49 |
| <i>Cryptosoma</i> | 61 |
| Cunningham (Major-Gen. A.), member of the Philological and Coins Committees | 57, 58 |

| | <i>Page</i> |
|---|-------------|
| Cunningham (Major-Gen. A.) on a coin from Mahanada | 104 |
| " " on a gold coin from Shaurpur | 113 |
| " " on relics from Ancient Persia | 144 |
| Cunningham (Dr. D. D.), member of the Library and Natural History Committees | 57 |
| Cuttack, copper-plate grant from | 9 |
| Dalals and their slang, notes on the Delhi... .. | 162 |
| Dalton (Major Gen. E. T.), death of | 22 |
| Dāma Jāta Sri, coin of | 114 |
| <i>Danainæ</i> | 142 |
| <i>Danaïs aglæa</i> | 142 |
| " <i>chrysippus</i> | 142 |
| " <i>gautama</i> | 142 |
| " <i>genutia</i> | 142 |
| " <i>hegesippus</i> | 142 |
| " <i>melaneus</i> | 142 |
| " <i>tytia</i> | 142 |
| " <i>septentrionis</i> | 142 |
| Das (Mukund), founder of sect of Hindu dissenters | 2 |
| Das (Sarat Chunder), on the life and legend of Tson Khapa | 82 |
| " " on the lives of the Tasi Lamas | 50 |
| " " on the rise and progress of Buddhism in Mongolia | 82, 92 |
| " " on the rise and progress of Buddhism in Thibet | 50 |
| <i>Daudebardia</i> | 62 |
| Delhi Dalals and their slang, notes on | 162 |
| <i>Dendrolimax</i> | 61 |
| Dhenkanal, report on the followers of Alekh by the Manager of | 4 |
| Dhula Bábáji | 3 |
| <i>Didymocorypha ensifera</i> | 116 |
| Dínára | 111 |
| Diurnal <i>Lepidoptera</i> from Nicobars | 92 |
| Donaldson (P.), withdrawal of | 94 |
| Douie (J. M.), elected an Ordinary Member | 56 |
| Dramma | 111 |
| <i>Durgella</i> | 62 |
| <i>Dysaules longicollis</i> | 116 |
| East India Company's pagodas | 142 |
| Eden (Sir Ashley), re-elected President | 39 |
| " remarks by, on resigning the office of President | 82 |

| | Page |
|--|---|
| <i>Elaphinae</i> | 71 |
| Elections | 2, 40, 56, 76, 90, 94, 104, 107, 140, 156 |
| Elephant Lords, coins of the | 141 |
| Elias (Ney), withdrawal of | 156 |
| Eliot (J.), appointed Scrutineer | 21 |
| „ re-elected Treasurer | 39 |
| <i>Elma</i> | 62 |
| <i>Ennea</i> | 62 |
| <i>Episcopus chalybeus</i> | 116 |
| <i>Eremophila arabica</i> | 116 |
| Estimate of income and expenditure | 24 |
| Ethnology of the Panjab, information wanted regarding | 157 |
| <i>Euchomena thoracica</i> | 116 |
| <i>Euplecta</i> | 62 |
| <i>Euplœa adamsoni</i> | 143 |
| „ <i>bremeri</i> | 143 |
| „ <i>core</i> | 143 |
| „ <i>godartii</i> | 143 |
| „ <i>klugii</i> | 143 |
| „ <i>leucogonyx</i> | 143 |
| „ <i>margarita</i> | 142 |
| „ <i>subdita</i> | 143 |
| „ <i>vestigiata</i> | 143 |
| <i>Eurypus</i> | 62 |
| Evans (Dr. Griffith), discovery of a Nematoid Hæmatozoon in a camel by | 63 |
| Expenditure, estimate of | 24 |
| Fanams. | 141 |
| Fedden (F.), member of the Physical Science Committee | 58 |
| Feistmantel (Dr. O.), member of the Library and Natural History Committees... .. | 57 |
| Fendall (C. E.), on preparation of paper by Thibetans | 94 |
| <i>Ferussacia</i> | 62 |
| <i>Filaria evansi</i> | 63 |
| „ <i>sanguinis-hominis</i> | 63 |
| Finance, report on | 23 |
| Fleur de lys | 40 |
| Flint flakes | 7 |
| „ implements of types hitherto found only in Egypt and Greek Archipelago, discovery in India of | 8 |
| Folk-songs from the Panjab | 94 |

| | <i>Page</i> |
|---|--------------|
| Folk-tales from the Upper Panjab | 106 |
| "Foot" in certain Gasteropoda, on the structure of the ... | 60 |
| Fossil bones, associated with stone implements | ... |
| Fryer (Lt.-Col. G. E.), on the Páli grammarian Kachcháyana ... | 118 |
| " " further note on Kachcháyana | 126 |
| Fusssaum | 60 |
| Gajapati dynasty, coins of the | 141 |
| Gandikota pagoda | 141 |
| Gardner (D. M.), withdrawal of | 2 |
| Gasteropoda, on the structure of the "Foot" in certain | 60 |
| <i>Gastrodonta</i> | 62 |
| Gáthá dialect, MS. in the | 110 |
| <i>Geomalacus</i> | 61 |
| Ghosha (Jnanendra Chunder), withdrawal of | 90 |
| Ghosha (Pratapa Chandra), member of the Library and Philological Committees | 57 |
| <i>Gibbus</i> | 62 |
| Gibbs (Hon. J.), elected Vice-President | 39 |
| " exhibition of a gold Ramtinki | 47 |
| " member of the Philological and Coins Committees ... | 57, 58 |
| " note on coins of the Andhrabrita Dynasty | 58 |
| " remarks on coins of the Shah kings | 46 |
| Giles (Herbert), proposed as an Associate member | 90 |
| " " elected an Associate member | 94 |
| <i>Girasia</i> | 62 |
| Girnar record | 44 |
| <i>Glandina</i> | 62 |
| <i>Glossula</i> | 62 |
| <i>Gonypeta anthæmon</i> | 116 |
| Gotami puta I, coins of | 59 |
| " II, coins of | 59 |
| Grierson (G. A.), member of the Philological Committee ... | 57 |
| " on Bihári declension and conjugation | 95 |
| Growse (F. S.), member of the Philological Committee ... | 57 |
| Gupta coins | 91, 104, 112 |
| " inscriptions | 108 |
| Guzarat, coins from | 41 |
| <i>Hadra</i> | 62 |
| Hæmatozoon discovered in a camel | 63 |
| <i>Heliotis</i> | 61 |
| Hammer, stone | 7, 8 |

| | <i>Page</i> |
|---|-------------|
| <i>Helicarion</i> ... | 62 |
| <i>Helicida</i> ... | 62 |
| <i>Helix</i> ... | 62 |
| Hennessey (Sir Pope), exhibition of a rare Chinese Bank-note by... | 77 |
| <i>Herpestes auropunctatus</i> ... | 106 |
| <i>Hestia cadelli</i> ... | 142 |
| " <i>agamarschana</i> ... | 142 |
| <i>Hierodula</i> (<i>Sphodromantis</i>) <i>arabica</i> ... | 116 |
| " (<i>Rhombodera</i>) <i>atricoxis</i> , var. <i>grandis</i> ... | 116 |
| " " <i>basalis</i> ... | 116 |
| " (<i>Sphodromantis</i>) <i>bicarinata</i> ... | 116 |
| " (<i>Rhombodera</i>) <i>flava</i> ... | 116 |
| " (<i>Sphodromantis</i>) <i>muta</i> ... | 116 |
| " " <i>quinquedens</i> ... | 116 |
| " <i>sternosticta</i> ... | 116 |
| Hindu dissenters, sect of ... | 2 |
| " folk-songs ... | 94 |
| " punch-marked coins ... | 112 |
| <i>Hipparion</i> ... | 115 |
| Hoernle (Dr. A. F. R.), exhibition of birch bark MS. from Bakhshālī | 108 |
| " " on coins found at Toomluk ... | 111 |
| " " on silver coins from Chhindwara ... | 114 |
| " " re-elected Philological Secretary ... | 39 |
| " " remarks on coin from Mahanada ... | 105 |
| " " remarks on Col. Fryer's paper on Kachcháyana | 125 |
| " " exhibition of 3 Gupta coins found near Mahanada ... | 91 |
| Hodgson (B. H.), Nepalese Buddhist Sanskrit MSS. presented by | 140 |
| Hog-deer, on an abnormality in the horns of the ... | 71 |
| Holroyd (Major W. R. M.), withdrawal of ... | 56 |
| Honorary Member list, vacancies in the ... | 22 |
| " Members, change in rules regarding ... | 156 |
| " Members elected in 1881 ... | 22 |
| Hume (A. O.), member of the Natural History Committee ... | 57 |
| Hungerford (R.), collection of <i>Clausilia</i> , made by ... | 14 |
| Hussain Khan Bahadur (Nawab Alijah Amir-ul-Mulk Syud Mahomed Siddeek), elected an Ordinary Member ... | 90 |
| Hussain Khan Bahadur (Syed Amir), elected an Ordinary Member | 56 |
| <i>Hyalimax</i> ... | 62 |
| <i>Hyalina</i> ... | 62 |
| <i>Hyelaphus porcinus</i> , Zim. ... | 71 |

| | Page |
|--|---------|
| Ibbetson (D.), information regarding Ethnology of the Panjab | |
| wanted by | 157 |
| Ilahi years of Akbar, rupees of the | 162 |
| Income, estimate of | 24 |
| Indian Museum, report regarding | 22 |
| Indo-Scythian coins | 91, 113 |
| Institutions with which exchanges of publications have been made | |
| in 1881 | 30 |
| <i>Iris orientalis</i> | 116 |
| Işábah | 27, 29 |
| Islam (Moulvie Serajul), elected an Ordinary Member | 107 |
| Iśvaradatta, coins of | 41 |
| Jacobi (Prof. Hermann), edition of <i>Parīṣhtaparvan</i> by | 94 |
| <i>Janella</i> | 62 |
| Japanese <i>Olausilia</i> | 14 |
| Jarrett (Major H. S.), member of the Philological Committee | 57 |
| Jinadámá | 41 |
| Johnstone (Capt. W.-H.), death of | 22 |
| Júnagadh inscription of Rudradámá | 42 |
| Kachcháyana | 116 |
| Kampti country, notes on the Singpho and | 64 |
| Kanaraka, coin of Yattamada | 143 |
| Kanauj coins | 47 |
| Kanerki, coin of | 113 |
| Kantiechandra Singh (Kumar), death of | 22 |
| Kashmir, trade dialects in | 127 |
| Katantra | 28 |
| Kathá Sarit Ságará | 27, 29 |
| Kawat, relics from near | 144 |
| Keene (H. G.), withdrawal of | 2 |
| Kennedy (P.), elected an Ordinary Member | 56 |
| King (Dr. G.), member of the Natural History Committee | 57 |
| Kirwee, silver coins from near | 47 |
| Kishore Singh Bahadur (Maharaja Kumar Harendra), elected an | |
| Ordinary Member | 94 |
| Knight (Hon. J. B.), withdrawal of | 56 |
| Knives, flint | 8 |
| Konapatías | 5, 6 |
| Kshira-nira-páyi | 3 |
| Kuád, relics from near | 144 |
| Kumara Gupta, coins of | 91, 112 |

| | <i>Page</i> |
|---|-----------------------------------|
| Kumbhipatiás | 5, 6 |
| Kunduz, relics from near | 144 |
| Lalita Vistara | 26, 27, 28, 30 |
| Lamas, the lives of the Taśi | 50 |
| Lámiyet-el-Arab | 29 |
| Latif (Nawab Abdul), elected member of Council | 39 |
| " member of the Philological Committee | 57 |
| Lawrence (Walter), elected an Ordinary Member | 156 |
| Lea (Prof. Isaac), death of, announced | 22 |
| Lepchas, mode of capture of butterflies by | 63 |
| Lepidoptera (Rhopaloceros) from the Indian Region | 14 |
| " from the Nieobars, diurnal | 92 |
| Lepper (Chas. H.), on the Singpho and Kampti country | 64 |
| Lewis (Dr. T. R.), member of the Natural History Committee | 58 |
| " on a Nematoid Hæmatozoon discovered in a camel | 63 |
| Library List | 15, 51, 72, 83, 96, 128, 145, 161 |
| " report on | 25 |
| <i>Limax</i> | 62 |
| Lingam | 47 |
| Lingayat pagoda | 141 |
| <i>Lipocraspeda</i> | 61, 62 |
| <i>Lithotis</i> | 62 |
| Lizard, the habits of a little known | 50 |
| Locke (H. H.), withdrawal of | 40 |
| Logan (R.), member of the Finance Committee | 56 |
| Lolo Manuscript presented, copy of a | 93 |
| London Agency, report on | 24 |
| Lyll (C. J.), member of the Philological Committee .. | 57 |
| Lydekker (R.), member of the Natural History Committee | 58 |
| M'Cann (Dr. H. W.), re-elected General Secretary | 39 |
| Macdonald (Rev. K. S.), Gupta coins received from | 91 |
| <i>Macroceramus</i> | 62 |
| <i>Macroceras</i> | 61 |
| <i>Macrochlamys</i> | 61 |
| Maduri puta I, coins of | 59 |
| Mágadbí | 95 |
| Magrath (C.), death of | 22 |
| "Magus" in gold, finding of a figure of a | 144 |
| Mahádeva gupta | 10 |
| Mahanada, coin from | 104, 108 |
| Mahárapa MS. | 108 |

| | <i>Page</i> |
|--|-------------|
| Mahesar, pottery from | 105 |
| Mahimá Gosain | 3 |
| Maithilí | 95 |
| Maliah (Ramesvar), withdrawal of | 2 |
| Malik Shab, chronology introduced by | 162 |
| Manchu Tartars, coin of | 113 |
| Mandelli (L.), death of | 22 |
| Manpur Pergunnah, silver coin found in the | 141 |
| <i>Mantis callifera</i> | 116 |
| <i>Mantodea</i> | 116 |
| Manuscript from Bakhshálí, birch-bark | 103 |
| Manuscripts presented by Mr. B. H. Hodgson, Catalogue of | 140 |
| Marshall (G. F. L.), member of the Natural History Committee | 53 |
| " on Rhopalocerous Lepidoptera from the Indian Region | 14 |
| " on the Butterflies of India | 142 |
| <i>Martensia</i> | 62 |
| Medlicott (H. B.), member of the Finance, Library, Natural His- tory and Physical Science Committees | 56, 58 |
| " re-elected Member of Council... .. | 39 |
| Members, statistics regarding, in Annual Report | 21 |
| <i>Meohippus</i> | 115 |
| Merk (W. R. H.), elected an Ordinary Member | 156 |
| <i>Mesopteryx alata</i> | 116 |
| " <i>platycephala</i> | 116 |
| <i>Microcystis</i> | 61 |
| Mímánsá Darśana | 27 |
| Ming dynasty, a banknote of the | 77 |
| Mint, specimen coins struck from the old dies in the Calcutta | 139 |
| Mithridates I, hoard of coins supposed to have been made before time of | 144 |
| Mitra (Dr. Rajendralala), announcement of completion of a Cata- logue of Nepalese MSS., presented by Mr. Hodgson, by | 140 |
| " exhibition of coins of Shah Kings of Sau- rashtra | 41 |
| " exhibition of silver coins found near Kirwee | 47 |
| " member of the Finance, Library, Philologi- cal and Coins Committees | 56, 58 |
| " on a copper-plate grant from Cuttack | 9 |
| " on clay seals from Sunet | 114 |
| " on terracotta figures from Tumlook | 114 |

| | <i>Page</i> |
|--|---|
| Mitra (Dr. Rajendralala), re-elected Vice-President ... | 39 |
| Möllendorff (O. F. von), on a collection of Japanese <i>Clausilia</i> ... | 14 |
| " on a new species of <i>Clausilia</i> from the Nicobars ... | 82 |
| " on new Asiatic <i>Clausilia</i> ... | 92 |
| Mogallána ... | 117 |
| Mongolia, on the Rise and Progress of Buddhism in ... | 82, 92 |
| Monthly General Meetings ... | 1, 40, 55, 75, 89, 93, 103, 107, 137, 155 |
| Montreal, invitation to a Scientific Congress held at ... | 40 |
| Moscow Société Impériale des Naturalistes, invitation to a Con- gress from the ... | 41 |
| Mukerji (Girijabhushan), elected an Ordinary Member ... | 2 |
| Munro (Col. W. F.), death of, announced... | 22 |
| Muntakhab-ul-Tawarikh ... | 29 |
| Mysore pagodas ... | 142 |
| Nanina ... | 61 |
| Naqáid of el Ferazdaq and Jerir ... | 29 |
| Naqqásb, trade dialects of ... | 127 |
| Narain Singh (Raja Ram), elected an Ordinary Member ... | 107 |
| Nash (A. M.), member of the Philological Committee ... | 57 |
| Nematoid Hæmatozoon discovered in a camel ... | 63 |
| Nepal, coins of the mintage of ... | 41 |
| Nepalese MSS. presented by Mr. B. H. Hodgson, Catalogue of ... | 140 |
| Nicéville (L. de), on butterflies taken in Sikkim ... | 163 |
| " and Wood-Mason (J.), List of diurnal <i>Lepidoptera</i> from the Nicobars by ... | 92 |
| Nicobars, diurnal <i>Lepidoptera</i> from... | 92 |
| " a new species of <i>Clausilia</i> from the ... | 82 |
| Nirukta ... | 28, 29 |
| Noe (Count de), death of, announced ... | 22 |
| Nonambavadi coins ... | 141 |
| <i>Odontoprion</i> (<i>Succineus</i>) ... | 62 |
| Officers, election of ... | 39 |
| O'Kinealy (Hon. J.), member of the Philological Committee ... | 57 |
| Oldham (R. D.), member of the Natural History Committee ... | 58 |
| <i>Oleacina</i> ... | 62 |
| <i>Omalonyx</i> ... | 62 |
| <i>Oopelta</i> ... | 62 |
| Oriental Biographical Dictionary ... | 30 |
| <i>Orophippus</i> ... | 115 |
| <i>Orthalicus</i> ... | 62 |

| | <i>Page</i> |
|--|----------------|
| Oxus, relics from banks of the | 144 |
| Pagoda coins of Southern India | 141 |
| Panchamukha Lingam | 47 |
| Pandit (Prannath), member of the Library and Philological Com- mittees | 57 |
| Panjab, folk-tales from the Upper | 106 |
| „ Hindu folk-songs from | 94 |
| „ information wanted regarding ethnology of the | 157 |
| „ trade-dialects in the | 127 |
| Paper by Thibetans, preparation of | 94 |
| Papier-maché, trade dialects of painters on | 127 |
| Parásara Mádhava Smṛiti | 29 |
| Pariṣhtaparvan accepted for publication in Bibliotheca Indica | 94 |
| <i>Parnacella</i> | 62 |
| <i>Parmarion</i> | 62 |
| Pátanjala Yoga Sūtra | 26, 27, 28, 30 |
| Peal (S. E.), member of the Natural History Committee | 58 |
| Pedler (A.), acts as Treasurer | 2 |
| „ elected a member of the Council | 56 |
| „ member of the Finance and Physical Science Com- mittees | 58 |
| <i>Pellicula</i> | 62 |
| <i>Peripatus</i> , segmental organs of | 60 |
| Peripodium | 61 |
| Persia, relics from Ancient | 144 |
| Pestle, stone | 8 |
| Peterson (F. W.), appointed auditor of the Society's accounts for 1881 | 58 |
| „ vote of thanks passed to | 77 |
| Phaláhári Bábháji | 3 |
| Phallus | 47 |
| Phillippart (Sir John), death of, announced | 22 |
| <i>Philomycus</i> | 62 |
| Planes, stone | 8 |
| <i>Plectopylis (plectostoma)</i> | 62 |
| Ploughshare, stone | 8 |
| Polydactylism in a horse | 115 |
| <i>Polyspilota insignis</i> | 116 |
| Pottery from Mahesar | 105 |
| Prākṛita Lakṣhaṇa | 23 |

| | <i>Page</i> |
|--|-------------|
| Presentations 1, 40, 55, 75, 89, 93, 103, 107, 137, 155 | 155 |
| Prideaux (Major W. F.), member of the Coins Committee ... | 58 |
| Prithiráj Rásau | 28 |
| Publications in 1881, Societies, &c., with which there has been an exchange of | 30 |
| „ report on | 25 |
| <i>Pulmonata</i> | 61 |
| Punched coins | 112 |
| Pupa | 62 |
| Rájendra-rikrama Sháb, coin of | 41 |
| Ramehundri mohur | 112 |
| Ramtinki, a gold | 47 |
| Rasps, flint | 8 |
| Raverty (Major H. G.), Memoir of the author of the <i>Tabaqát-i-Násirí</i> , by | 14 |
| Relics from Ancient Persia | 144 |
| Renard (Charles), Congress held in honour of | 41 |
| Report of Council | 21 |
| Reynolds (Hon. H. J.), elected President | 90 |
| „ re-elected Vice-President | 39 |
| „ reply to Sir Ashley Eden's remarks on re-signing the office of President | 88 |
| Rhopalocerous Lepidoptera | 14 |
| <i>Rhysota</i> | 61 |
| Ring-stones | 7, 8 |
| Rivett-Carnao (H.), coins sent by | 41 |
| „ member of Philological and Coins Committees... .. | 57, 58 |
| „ on a collection of stone implements | 6, 8 |
| Rodgers (C. J.), on coins supplementary to "The Chronicles of the Pathán Sultáns of Dehli," | 148 |
| „ on rupees of the Ilahi years of Akbar | 162 |
| Roepstorff (F. A. de), proposed as an Associate Member | 90 |
| „ „ elected an Associate Member | 94 |
| Rose (E.), coins received from | 47 |
| Ross (Major W. G.), withdrawal of | 2 |
| <i>Rotula</i> | 62 |
| Rudradáma, Júnagar inscription of... .. | 42 |
| Rudra Sáb, coins of | 41 |
| Rudrasena, coins of | 114 |
| Rudra Siñha, coins of | 41 |
| Rules, changes in the | 156 |

| | <i>Page</i> |
|---|-------------|
| Ruminants, on the evolution of antlers in | 71 |
| <i>Rusina</i> ... | 71 |
| Sáh Kings, religion of | 42 |
| Sangharakkhita Thera ... | 117 |
| Sáha coins | 114 |
| Sanpo river, information regarding the | 161 |
| Sáradá characters, MS. in | 103 |
| Sarwar (Moulvie Golam), elected an Ordinary Member | 90 |
| Satrap coins | 114 |
| Sawyer (Capt. H. A.), withdrawal of | 40 |
| Schwendler memorial, subscription of Rs. 50 to | 77 |
| Scorpion spiders, scent-glands of the | 59 |
| Scully (Dr. J.), appointed Natural History Secretary | 156 |
| " elected member of the Natural History Committee | 141 |
| Seal from near Kawat, a gold | 144 |
| Seals from Sunet, clay | 114 |
| Secretary's office, report on | 26 |
| Senart (E.), elected an Ordinary Member | 94 |
| <i>Sessara</i> ... | 62 |
| Shah Kings of Suráshtra, coins of | 41, 114 |
| Shaurpur, gold coin from | 111 |
| Shirazi, Chronology introduced by Hakim Fath Ullah | 163 |
| Sikkim, butterflies taken in | 163 |
| <i>Simulopsis</i> ... | 62 |
| Singpho and Kampti country, notes on | 64 |
| Sircar (Dr. Mohendralala), member of the Library and Philological Committees | 57 |
| <i>Sitala</i> ... | 61 |
| Siva gupta | 10 |
| Shyamaldass (Kabiraj), elected an Ordinary Member | 90 |
| Skanda Gupta, coin of | 91 |
| Societies with which exchanges of publications have been made during 1881 | 30 |
| Souttar (W. M.), death of | 22 |
| Spear grass, torsion in the awns of | 49 |
| Spens (Rev. A. N. W.), withdrawal of | 140 |
| <i>Spilornis Cheela</i> ... | 106 |
| Spirit-levelling operations, error in | 78 |
| Stewart (H. E. Sir D. M.), elected an Ordinary Member | 90 |
| Stokes (Hon. Whitley), withdrawal of | 65 |
| Stone implements, exhibition of | 6 |

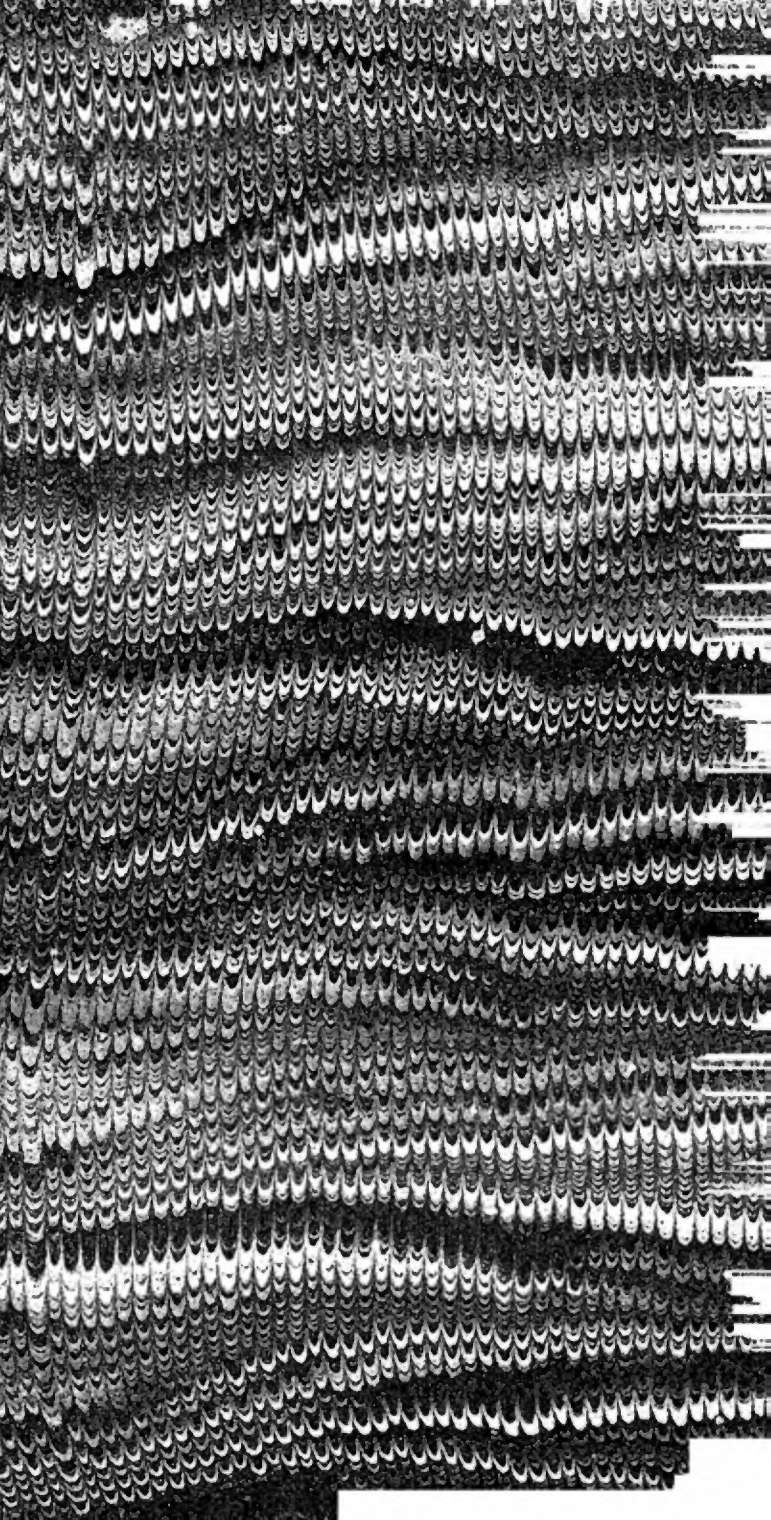
| | <i>Page</i> |
|--|-------------|
| Stone implements, associated with fossil bones ... | 8 |
| <i>Strebelia</i> ... | 62 |
| <i>Streptaxis</i> ... | 62 |
| <i>Streptosteles</i> ... | 62 |
| <i>Stylommatophora</i> ... | 61 |
| <i>Succinea</i> ... | 62 |
| Sunet, clay seals from ... | 114 |
| Suráshtra, coins of Shah kings of ... | 41, 114 |
| Surendravikrama Sháh, coins of ... | 41 |
| Súsruta ... | 29 |
| Swinhoe (W.), member of the Philological Committee ... | 57 |
| Swynnerton (Rev. Chas.), on Folktales from the Upper Panjab ... | 106 |
| Tabaqát-i-Násirí ... | 14, 23 |
| Taimur, damri of ... | 143 |
| Taittiríya Samhitá ... | 26, 27, 29 |
| <i>Tarachodes dissimulator</i> ... | 116 |
| <i>insidiator</i> ... | 116 |
| Tarikh-ul-Khulfa ... | 26, 27, 29 |
| Tasi Lamas, the lives of the ... | 50 |
| Taylor (Com. A. D.), member of the Physical Science Committee ... | 58 |
| Temple (Lieut. R. C.), on Delhi dalals and their slang ... | 162 |
| " on Hindu folk-songs from the Panjab ... | 94 |
| " on the trade-dialects of the Naqqásh in the Panjab and Kashmir ... | 127 |
| Tennant (Col. J. F.), member of the Library, Physical Science and Coins Committees ... | 57, 58 |
| <i>Tennentia</i> ... | 62 |
| Terra-cotta figures ... | 111, 114 |
| <i>Testacella</i> ... | 62 |
| <i>Testacellidæ</i> ... | 62 |
| <i>Thalassia</i> ... | 62 |
| <i>Thelyphonus</i> ... | 59 |
| Thibaut (Dr. G.), member of the Philological Committee ... | 57 |
| Thomas (E.), on Arab Voyages to India in the Ninth Century ... | 64 |
| " on the Indian Balhará ... | 82 |
| Thibetans, preparation of paper by ... | 94 |
| Tibet, return of a party of explorers from ... | 159 |
| " rise and progress of Buddhism in ... | 50 |
| Tidal observations of the Indian Survey Dept., on the spirit-levelling operations executed in connection with ... | 78 |

| | <i>Page</i> |
|--|-------------|
| Toomluk, coins and terra-cotta figures from | 111 |
| Torsion in the awns of spear grass | 49 |
| Travancore pagoda | 142 |
| Treasure Trove Act, coin acquired under | 114 |
| <i>Triboniophorus</i> | 62 |
| <i>Trochomorpha</i> | 62 |
| Tson Khapa, on the life and legend of | 82 |
| Uchah, phallus from | 48 |
| <i>Vaginulida</i> | 62 |
| <i>Vaginulus</i> | 62 |
| Varáha coins | 47, 141 |
| Vasitho puta I, coins of | 59 |
| Váyu Purána | 27, 29 |
| <i>Ventridens</i> | 61 |
| <i>Veronicella</i> | 62 |
| <i>Videna</i> | 62 |
| Vijayanagar pagodas | 141 |
| Vijaya Sáh, coins of | 41, 114 |
| Vinaigriers | 59 |
| Vishṇu Smṛiti | 26, 28, 30 |
| Viśva Sáh, coin of | 41, 114 |
| Viśva Siñha, coins of | 41 |
| <i>Vitrina</i> | 62 |
| <i>Vitrinoconus</i> | 62 |
| <i>Vitrinopsis</i> | 62 |
| Waldie (D.), appointed Scrutineer | 21 |
| " member of the Library and Physical Science Com- mittees | 57, 58 |
| " re-elected member of Council | 39 |
| Walker (Lieut.-Gen. J. T.), member of the Physical Science Com- mittee | 58 |
| " on the return of a party of explorers from Tibet | 159 |
| " on the spirit-levelling operations exe- cuted in connection with the tidal observations of the Indian Survey Dept. | 78 |
| " remarks on Mr. Lepper's notes on the Singpho and Kampti country | 70 |
| Waterhouse (Major J.), elected auditor | 40 |
| " elected member of Council | 39 |

| | Page |
|--|----------------|
| Waterhouse (Major J.), member of the Library and Physical Science Committees | 57, 58 |
| Westland (J.), elected auditor | 40 |
| " member of the Finance Committee | 57 |
| " re-elected member of Council | 39 |
| " vote of thanks passed to | 77 |
| Wheeler (P. C.), to pay subscriptions, refusal of | 156 |
| Wilson (R. H.), coins forwarded by | 111 |
| Winterscale (J.), copper-plate grant found at Cuttack by | 9 |
| Wood-Mason (J.), on leaving India, vote of thanks passed to | 141 |
| " on new and little-known <i>Mantodea</i> | 116 |
| " on polydaetylysm in a horse | 115 |
| " on the anatomy of the scorpion spiders (<i>thelyphonus</i>). Part I. The scent-glands | 59 |
| " on the structure of the "foot" in certain terrestrial <i>gasteropoda</i> | 60 |
| " re-elected Natural History Secretary | 39 |
| " and Nicéville (L. de), on diurnal <i>Lepidoptera</i> from the Nicobars | 92 |
| Worms, segmental organs of | 60 |
| <i>Xesta</i> | 61 |
| Yattamada Kanakraka, coin of | 143 |
| Yezdegird III, chronology introduced by | 162 |
| Yoga Sūtra of Patanjali | 26, 27, 28, 30 |
| Yusuf (Hon. Maulvi Muhammad), elected an Ordinary Member | 107 |
| Zua | 62 |







Central Archaeological Library,
NEW DELHI.

Call No. 891.65/7AEB

Author—

Title—

"A book that is shut is but a block"

CENTRAL ARCHAEOLOGICAL LIBRARY
GOVT. OF INDIA
Department of Archaeology
NEW DELHI.

Please help us to keep the book